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ABSTRACT

A series of films focused on movement education and rhythm training in string playing with emphasis on the violin were developed. An introductory film deals with principles of movement in string playing. Fifteen additional titles offer guidance to the student and teacher in the various details of basic string instruction. A summary film presents a final report on the performance and progress of children trained in the Project at the end of formal instruction. The central issue of the project under test was the hypothesis that movement training, designed to free the student from excessive tensions, can be introduced within an organized plan of string instruction, and that such a plan, in the long run, will result in faster learning and better playing in all facets of instruction. The materials were used and tested in an extensive two-year trial, involving 22 teaching centers in Illinois and additional out-of-state testing centers. Products of the study include: a film series in color on "The Teaching of Action in String Playing"; an introductory film and other films; a tune record and three exercise records. Recommendations include: (1) Teacher-training institutions hold the key to the future of string instruction in the schools; and (2) Programmed teaching materials and the use of audio-visual aids point to a new era of efficient instruction of string instruments. (For Appendix F, see ED 054 190.) (Author/CK)

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FINAL REPORT

Project No. 5-1182

Contract No. OEC-3-6-051182-1634

DEVELOPMENT AND TRIAL OF A TWO YEAR PROGRAM OF STRING INSTRUCTION

Project Director:

Paul Rolland

Associates:

Marla Mutschler: Manuals, Final Report

Richard Colwell: Research Design

Donald L. Miller: State-wide Trial of Materials

Arthur Johnson: Administration

University of Illinois
Urbana, Illinois 61801

April, 1971

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

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The research reported herein was performed pursuant to a contract with the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

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PRODUCTS SUBMITTED SEPARATELY

Seventeen 16 mm Color Films: The Teaching of Action in String Playing
One Black and White Film: The Teaching of Kató Havas
Wall Charts: Twenty-two Pages 20½" x 13 3/4"
Four Recordings: One Tune Record and Three Exercise Records
Three Video Tapes

ACKNOWLEDGEMENTS

This Project has been accomplished by the work and advice of many people. As Project Director I have been helped by the competent advice of many capable individuals when the work called for knowledge and experience which I did not possess. While it is impossible to list here all who have participated in the research, the teaching, and the technical execution of work accomplished during the past four and a half years in this Project, there are a few whose names should be cited here for special thanks:

Richard Colwell, James S. Ballinger, and Frank Spinosa, who have helped greatly with the preliminary planning of objectives and drafting of the proposal;

The consultants, who gave time and wisdom during the early stages of the Project in evaluations and shaping the proposed program: Ivan Galamian, Marjorie M. Keller, Robert H. Klotman, Jack Pernecky, Marvin Rabin, Roman Totenberg, and Howard M. Van Sickle;

The eminent scientist, Dr. Frances M. Hellebrandt, M.D., whose keen analysis near the completion of the Project has focused like a beacon on some important principles of physiology, justifying the achievements of the Project from the perspective of her field of discipline;

Members of the University of Illinois staff, who have generously given their time for work and consultation whether or not compensated for such work: Richard Colwell, Endre Granat, Arthur Johnson, Don Miller, and Thomas Wisniewski;

Kelvin Masson, whose work as Research Associate during the first year was interrupted because of ill health;

Marla Mutschler, Research Associate, who for the past three years became indispensible with her most capable and untiring help in every facet of the Project, whether it be teaching, revision and editing of materials, research activities, or writing this Report.

I am grateful to the many teachers in the states of Illinois, Indiana, Texas, Iowa, Tennessee, and California who have helped in the trial and evaluation of our materials, and to the many graduate and undergraduate assistants who have assisted with the local teaching and with the many chores of the Project.

Thanks are due to the staff of the Motion Picture Service of the University of Illinois for their professional and artistic work in producing the highly successful and beautiful film series: The Teaching of Action in String Playing.

Special thanks are due to two dear friends and colleagues: Stanley Fletcher, who volunteered to compose a large number of beautiful and

highly effective teaching pieces which he permitted the Project to use, and which highly motivated the children; to Margaret Farish for her enthusiastic help in the Project and for her creative collaboration in an allied project, helping to create a significant body of contemporary string literature for the early stages of instruction, samples of which were used with much success in the Project.

And, finally, thanks are due to my wife, Clara, without whose patience and understanding this Project could not have been accomplished.

SUMMARY

Development and Trial of a Two-Year Program of String Instruction

Project Number: 5-1182

Contract Number: OEC-3-6-051182-1634

This Project developed a series of films focused on movement education and rhythm training in string playing with emphasis on the violin. An introductory film deals with principles of movement in string playing. Fifteen additional titles offer guidance to the student and teacher in the various details of basic string instruction. A summary film presents a final report on the performance and progress of children trained in the Project at the end of formal instruction.

Supplementing the films are the Curriculum Guide, Teachers Manuals, and Wall Charts. A series of four records and their music was also produced for use in the classroom or at home.

The materials were used and tested in an extensive two-year trial, involving twenty-two teaching centers in Illinois and additional out-of-state testing centers. Informal evaluations of the materials were collected during many national, regional, and state meetings of music teachers. A detailed report of the trial teaching is offered in the main body and appendixes of the Final Report.

The local Project class appeared at a number of these meetings (including the White House Conference on Children in December, 1970) and assisted in the preparation of films. Thus, many of the materials and achievements of the Project have already been presented to the public.

The central issue of the Project under test was the hypothesis that movement training, designed to free the student from excessive tensions, can be introduced within an organized plan of string instruction, and that such a plan, in the long run, will result in faster learning and better playing in all facets of instruction. The frequent performances of the local Project class demonstrated the validity of the hypothesis above all expectations.

The off-campus teaching centers, while operating under difficulties, proved the validity and usefulness of Project materials. Although the end results were less spectacular than those of the local classes, the cooperating teachers reported improvement in their teaching methods and increased motivation among their students. Furthermore, the extensive testing of the materials allowed for their substantial improvement during the course of the Project.

Significant were the interest and enthusiasm of many music educators in charge of college string teacher training programs. The Project staff received many requests for film showings to prospective teachers.

While the Project concentrated on the technical and behavioral problems of the student, it also triggered the composition of many excellent teaching pieces by noted composers: an important and unforseen result of the Project.

CHAPTER ONE

INTRODUCTION

Purpose

The main purpose of the University of Illinois String Research Project was to develop and test materials for a course of study which would systematically establish natural playing movements free from excessive tension and a firm foundation of basic technique and tone production for the string student. The research dealt primarily with the violin. However, the principles and musical materials are also applicable (with minor adjustments) to the viola, cello, and double bass.

The materials developed, tested, and revised include 16 mm color films exploring seventeen topics, coordinated teachers manuals, and visual aids. Tune and exercise records and their music texts were also produced for convenience and enrichment.

Background

The Project assumed that proper movements in violin playing can result only from a natural and coordinated use of the whole body and its components. Development of the movements in the most suitable and expedient manner requires the use of studies that deal directly with these movements and which are aimed at the effortless production of good tone and technique.

In sports, dancing, and activities which require timing, coordination, and rhythmic response, these principles have long been accepted. Traditional violin pedagogy, on the other hand, is primarily concerned with the more obvious use of finger, hand, and arm movements during playing. Because of their preoccupation with the complexities of technical and musical problems, traditional methods fail to give proper attention to the development of natural physical and body responses necessary to acquiring sound performing skills.

Good violin playing possesses a specific "Gestalt quality" which is not determined by the individual elements it contains but rather by the structural relationships between these elements and the whole. Within this whole, each element serves a specific and significant function, but only through the smooth coordination of all elements will successful performance result. As stated by Matthei: "There exists a primacy of the whole. The whole and the parts determine each other mutually."[1]

Thus, successful violin playing is not synthetically determined by its component parts, as one would tend to believe upon reading Carl Flesch's famous and widely accepted Urstudien (Basic Studies).[2] In this work Flesch broke down the complex structure of violin performance into small components for the purpose of intensive study of isolated parts and thus established, in the first part of this century, a pedagogy that influenced many methods and is still dominant today.

By applying the "Gestalt" approach for a number of years before the Project began to his students and to young people enrolled in the University of Illinois Summer Youth Music program, the Project Director discovered that dramatic results could be obtained by freeing the body from static tension and by inducing slight body movements beneficial to the bowing. The scientific backing for these practical experiences will be presented in sections of Chapter Two (Related Research) and Chapter Five (Teachers Manual: "Principles of Movement in String Playing").

The Problem

It has been commonplace since the mid-nineteen-thirties to talk about the string problem. With the phenomenal rise of wind instrument playing, string instrument study suffered a great decline after 1930. During the mid-nineteen-forties an acute string shortage was evident which gave rise to a wholesome reaction spearheaded by the American String Teachers Association. A vast number of articles on this subject appeared in the journal of this organization and in other musical and educational publications. These articles on the string shortage proposed ways and means of motivating children to string study and described procedures for organizing and conducting string classes. Pamphlets such as "Organizing String Programs"[3] by Frank Crockett and "Success with School Orchestras"[4] by Robert Klotman were among the most significant writings.

As the shortage of student string players gradually diminished with the rise of string classes and orchestras in schools, a new problem became evident. Vast numbers of students in these orchestras played very poorly and quit playing upon graduation. The Two Symposia sponsored by the Boston Symphony at Tanglewood during the summers of 1963 and 1964 deplored the poor quality of student players and the subsequent lack of professionally-oriented talent. Indeed, as one observes the individual quality of playing of the multitude of children, their poor approach to string playing is evidenced by inferior tone quality and intonation, poor positions, and uncoordinated, angular movements.

During his twenty-five years of teaching, the Project Director had found that this situation could be significantly improved by treating the playing mechanism as an organic unit. The development of the student's perception of the whole during the act of playing and awareness of the correct kinesthetic sensation for performing the various motion patterns necessary in playing had affected surprising improvement in the learner, helping him to achieve a more natural and relaxed approach to playing and a better tone and technique.

This perception and treatment of the whole does not imply lack of analysis or neglect of detail. Scott observes:

> The analysis of activities should make for better and easier teaching. Few students are sufficiently visual-minded or have adequate kinesthetic sense to imitate immediately or accurately a demonstrated skill. Nor can most activities be completely taught as a single unit. At some time, during the

> learning process, parts must be singled out for emphasis, perhaps one part for one student, and another part for another student. Then these parts must be brought together in proper sequence as a coordinated whole.[5]

The Project is based on a "whole-part-whole approach," stressing a visual and mental image of the functioning whole through expert demonstration by the instructor and filmed example, the improvement of the detail within the whole, whenever necessary, and the final mastery of skill by frequent repetition and review for uninhibited recall and application. In this approach playing movements are systematically programmed and developed, in contrast to common practice in which the playing of certain tunes and exercises does not necessarily result in good motion patterns. For instance, a single whole bow stroke is developed with a preparatory movement and a graceful and natural "follow-through" including small, yet beneficial, movements in the legs, trunk, head, and, of course, the arm, as single repeated strokes are practiced in a rhythmic manner with appealing chord structures. This type of study resembles the golfer's approach, which is painstakingly directed toward the performance of his singular act through repetition and improvement of form.

Obviously, in string playing, learning such skills represents only a phase of the total study repertoire which must deal with a multitude of forms in addition to musical values. Often string teachers allow insufficient time for genuine musical progress because of using vast amounts of contrived and questionable materials for developing technique. In contrast, the Project deals directly with musical values on one hand and with the development of correct playing position and motion patterns on the other. Emphasis is on the development of the player's sense of comfort and freedom from static muscular tension. All parts of the body remain supple.

Excessive body tensions, the various ailments of form, and fumbling, which stem from uncoordinated movements, are removed by inducing slight movement in the limbs and joints that have a tendency to become rigid. Movements are performed with the support of the entire body and its musculature since "the greater the number of [synergic] muscles engaged in a movement, the more accurate and graceful is the movement. The more complete the relaxation of antagonistic muscles, the more rapid and powerful is the movement."[6]

The Project is based on these and other principles of movement advocated by kinesiologists. (See the teachers manual "Principles of Movement in String Playing," Chapter Five.) The correct use of the body (the main goal of this study) is taught through "Action Studies," a series of motion studies, applicable at any age, which presents the many aspects of basic violin technique in an organized course of instruction.

Objectives

1. Development and testing of materials for teaching natural playing movements free from excessive tension, applicable to students of any age and supplementary to any standard method book of instruction.

2. Production of a series of color films dealing with principles and motion techniques in string playing and demonstrating the "Action Studies."

3. Production of teachers manuals coordinated with the films.

4. Production of a wall chart (a condensed, illustrated list of the "Action Studies") for the teacher and classroom.

5. Selection and/or production of musical materials for a two-year curriculum.

6. Production of a series of tune and exercise recordings to expedite the teaching of basic requirements in order to allow time for the teaching of good motion techniques.

7. Trial of the above materials in a number of schools throughout Illinois in a two-year course, and demonstrations by classes to groups of experts.

8. Use of the "Action Studies" in junior and senior high school classes for short-term remedial courses.

9. Improvement of the standards of string teaching.

Need for the Research

There is a considerable amount of literature which discusses the technique of string instrument playing. Some of these works have been based on sound research procedures. Curiously, no extensive research has been conducted on the actual teaching level, and it appears that the majority of the string teachers are ignorant of sound principles stressed in the literature over sixty years ago.

For example, Dr. Frederick Steinhausen stressed the importance of curved bowing motions in 1902 in his classic work Die Physiologie der Bogenführung.[7] However, his sound principles have yet to be applied by the majority of string players. Similarly, Percival Hodgson, in his Motion Study and Violin Bowing,[8] first published in 1934, asserts that practically all (expert) bowing movements follow a curved path. The "Action Studies" of this Project realize these and other principles.

Another significant aspect of the Project is the encouragement of slight body movements which result in a change of the violin angle during the course of the stroke: a flatter instrument position at the tip and increased tilt at the frog. While this tendency is often obvious in the playing of artists and professionals, it has not yet penetrated the violin teaching fraternity, nor is it mentioned in method books, most of which are conservative in their static and planar presentation of violin playing with their rigidly presented positions and forms. These changes of violin angle during the bow strokes permit an increased curving of the bow stroke and bring about greater freedom in bowing. Furthermore, the increased tilt at the frog and flatter and somewhat higher position at the tip helps to equalize the weight of the bow by increasing its weight at the tip (owing to gravity) and reducing its weight by a more vertical placement at the frog.

Another principle stressed is an increase of total body mobility as a means of overcoming body tensions and poor coordination. Carl Flesch, in his Art of Violin Playing,[9] a classic in the field, already speaks of the advisability of a reasonable amount of body movement. The principle of body mobility is stressed in the study[10] of Dr. F. F. Polnauer (1952) and in his latest book: Senso-Motor Study and Its Application to Violin Playing.[11] In what he describes as "bilateral bowing" he advocates a relatively high degree of mobility in the body, as this increases skill and work efficiency.

This research intends to demonstrate that body freedom and mobility and good motion patterns benefit tone production and technique.

The expert teacher usually demonstrates the principles mentioned above visually. However, a carefully planned and structured series of films could fill the need where a master teacher is not available or where reinforcement of instruction is desired. Therefore, the Project developed a series of films, "The Teaching of Action in String Playing," on the basic problems of string teaching (with special emphasis on the violin). These films, which use children, teachers, and artists as subjects, can reinforce the work of the teacher powerfully and enlighten and motivate both the teacher and student. The coordinated teachers manuals offer a detailed explanation of the "Action Studies," and the wall charts and curriculum guide present a summary view.

While the heart of the Project is the "Action Studies," the Project staff assumed that the teaching of good motions would be emphasized only if the teacher had at his disposal recorded musical materials that would allow the teaching of the fundamentals (other than motion techniques) in a minimum amount of time. Toward this end, one tune record and three exercise records were produced. Additional musical materials used in the Project were the contemporary pieces commissioned by the Contemporary Music Project at the University of Illinois (Small Project No. 7-E015, Paul Rolland, Project Director, and Margaret Farish, Principal Investigator) and the tunes composed by Professor Stanley Fletcher of the University of Illinois, based on pedagogical sequence by the Project Director. While the stated purpose of the Project was to develop and test a two-year curriculum of string instruction, the Project staff believed that the use of the Project materials in teacher training programs would result in higher standards of string instruction; this belief was supported by the enthusiastic responses to products and demonstration classes of the Project at numerous national conventions and state teachers meetings. (See Chapter Twelve, Clinic Responses.)

Procedures

Phase I.

After the grant had been received, the Project began during the Summer of 1966 with meetings of the local staff and the intensive instruction of a remedial class in coordination with the university's summer youth program. This group tested the principles of the approach and served as subjects in the film "Remedial Teaching." Although the filming was originally scheduled for the Summer of 1967 (Phase V), the availability of good subjects and time indicated that it was advisable to start ahead of schedule. This film, demonstrating the procedures and results of eight days of class teaching, became one of the most praised and relevant in the series. The remedial project is described in detail in Chapter Four of this Report.

Selected European teachers were also consulted during the summer of 1966. In London the Project Director observed the work of Miss Katò Havas and received the film of her teaching methods which had been commissioned by the Project before the visit. The Project Director also observed string classes of gypsy children in Budapest. These activities are described in detail in Chapter Three.

A conference for Project consultants and advisors was held in November of 1966. The plan for the film series was presented, and details of the proposed pedagogy were discussed. The Havas film was shown and evaluated. The film "Remedial Teaching" was presented as an example of the forthcoming series. The consultants decided that the project materials should be designed for use with method books or musical materials of the teacher's choice. To comply with this decision the staff agreed to omit the planned student books of "Action Studies" and present the "Action Studies" in detail only in the films, coordinated teachers manuals, and related visual aids. A detailed report of this meeting is offered in Chapter Seven.

Phases II and III.

To produce all films, teachers manuals, records, and musical materials during the academic year 1966-67 (as originally scheduled) proved to be both impractical and impossible. Submitting the rough draft of each teachers manual to the consultants and advisors for suggestions and additional revisions resulting from the trial teaching required a far greater amount of time than originally anticipated. The fire in the University of Illinois Motion Picture Service in December, 1966 caused a serious setback in the operation of that agency, resulting in constant delay in the production of films. Therefore, it was impossible to present the entire series to the cooperating teachers and students on schedule. For the above reasons, the films and their manuals were produced from 1966 to 1970, the last of the series being used only locally and in various state and national meetings during the fourth-year extension of the Project. The development of materials is explained in detail in Chapters Five and Six.

Phase IV.

A two-day workshop for the cooperating teachers, originally planned for late Spring of 1967, was held in September, 1967 directly preceeding the organization of the trial classes.

Phase V. (Phase VI in the original application)

Organization of classes in the various state-wide trial of the materials took place in the Fall of 1967. The centers were taught by the cooperating teachers and observed by members of the Project staff throughout the school year. A detailed description follows in Chapters Ten and Eleven.

Phase VI.

A second teachers workshop was conducted, the experiences of the first year of teaching were evaluated, and revisions were made in the curriculum.

Phase VII.

A short-term remedial class was conducted during the summer of 1968 and the proceedings were video-taped for possible later use. These are described in detail in Chapter Four.

Phase VIII.

The majority of the original state-wide trial classes were taught and observed during the 1968-69 academic year. A retrial of the first-year materials took place in new classes established for beginners. These activities are described in Chapters Ten and Eleven.

Phase IX.

During 1969-1970 the revision of the materials continued and two summary films and their manuals were produced. Instruction of and demonstrations by the local classes continued, as described in Chapter Eight.

Phase X.

Plans for distribution of the materials began early in 1969. Many publishers and film distributors were contacted. The scope and size of the Project and limitations of the market created many problems. As this Report is submitted, negotiations with a major music publisher are in progress for the distribution of the films and musical materials produced by the Project.

Footnotes

[1] R. Matthei, Das Gestaltproblem (München, 1929), quoted in Frederick F. Polnauer and Morton Marks, Senso-Motor Study and Its Application to Violin Playing (Urbana, Ill.: American String Teachers Association, 1964), p. 2.

[2] Carl Flesch, Urstudien (New York: Carl Fischer, 1911).

[3] Frank Crockett, Organizing String Programs (Urbana, Ill.: American String Teachers Association, 1956).

[4] Robert H. Klotman, Success With School Orchestras (Urbana, Ill.: American String Teachers Association, 1958).

[5] M. Gladys Scott, Analysis of Human Motion: A Textbook in Kinesiology (New York: F. S. Crofts and Co., 1942), p. 7.

[6] L. E. Morehouse and A. T. Miller, Jr., Physiology of Exercise, 3rd ed. (St. Louis: C. V. Mosby Co., 1959), p. 80.

[7] Frederick A. Steinhausen, Die Physiologie der Bogenführung (Leipzig: Breitkopf & Härtel, 1902).

[8] Percival Hodgson, Motion Study and Violin Bowing (1934; rpt. Urbana, Ill.: American String Teachers Association, 1958).

[9] Carl Flesch, The Art of Violin Playing, Book One: Technique in General, Applied Technique, trans. Frederick H. Martens, 2nd revised ed. (New York: Carl Fischer, 1939), p. 14; and Book Two: Artistic Realization and Instruction, trans. Frederick H. Martens (New York: Carl Fischer, 1930), pp. 92-96.

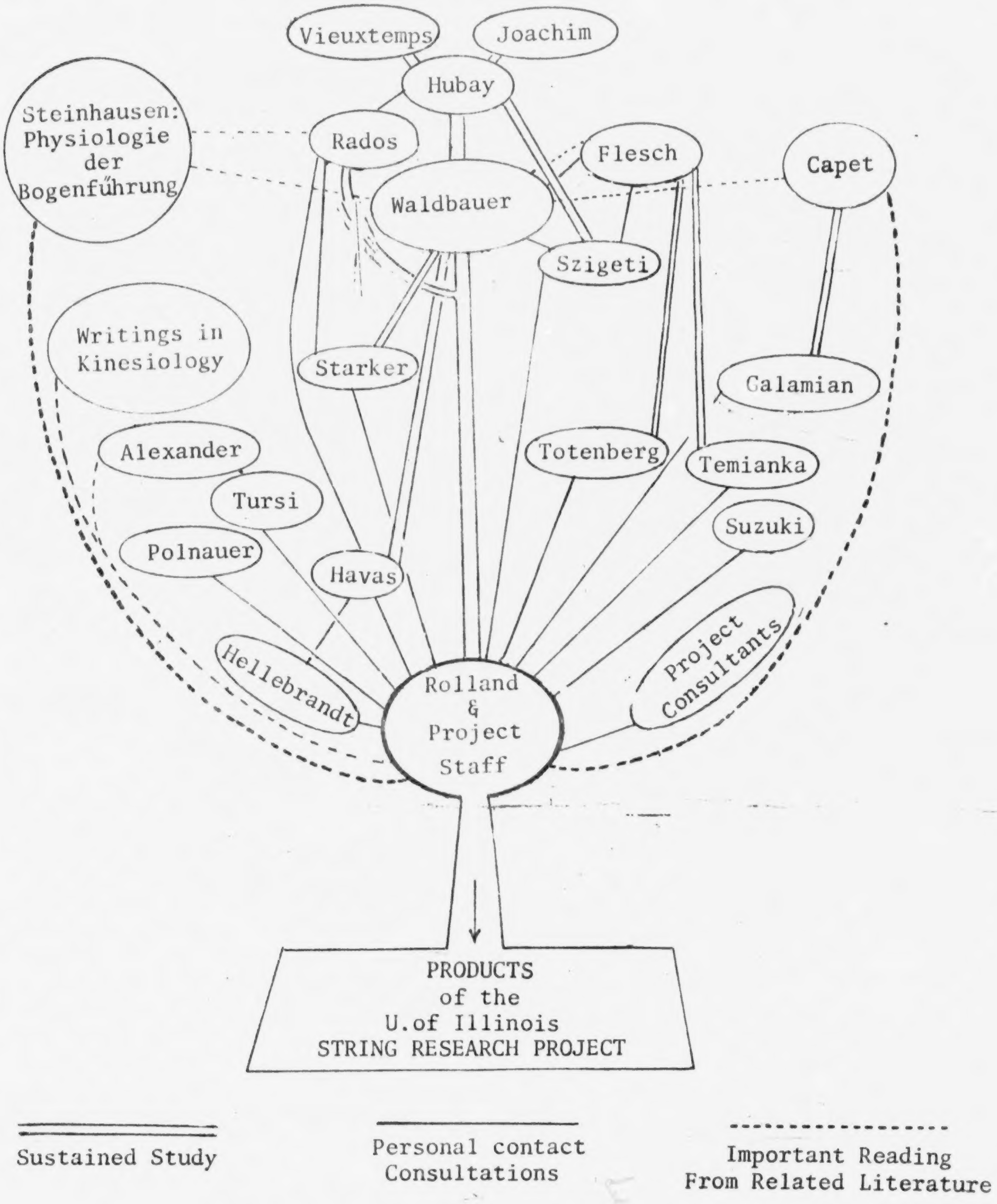
[10] Frederick F. Polnauer, "Bio-Mechanics, A New Approach to Music Education," Journal of the Franklin Institute, 254, No. 4 (1952).

[11] Frederick F. Polnauer and Morton Marks, Senso-Motor Study and Its Application to Violin Playing (Urbana, Ill.: American String Teachers Association, 1964).

CHAPTER TWO

RELATED STUDY AND RESEARCH

The illustration below offers a survey of training and significant professional contacts related to the Project.


Vieuxtemps
Joachim
Hubay
Steinhausen: Physiologie der Bogenführung
Rados
Flesch
Capet
Waldbauer
Szigeti
Writings in Kinesiology
Starker
Calamian
Alexander
Totenberg
Temianka
Tursi
Suzuki
Polnauer
Havas
Hellebrandt
Rolland & Project Staff
Project Consultants
PRODUCTS of the U.of Illinois STRING RESEARCH PROJECT
Sustained Study
Personal contact Consultations
Important Reading From Related Literature

Early Training

The Project Director received much inspiration during his student days from the teaching of Imre Waldbauer at the Franz Liszt Academy of Music, Budapest. (Waldbauer later taught at the University of Iowa until his unexpected death in 1953). Although a student of Hubay, Waldbauer was influenced by Die Physiologie der Bogenführung by the German physiologist F. A. Steinhausen, who emphasized the essential leadership of large limbs in preference to the overemphasized wrist activity of the Joachim school.

Practicum

In addition to many years of private teaching, the seventeen years of teaching of children in the University of Illinois Summer Youth Music program served as the Director's background for this Project. In this program, many young musicians came under the tutelage of the Project Director for periods of two weeks. There was a strong incentive to produce rapid and possibly lasting changes in the playing of the hundreds of children during the brief periods of instruction. It was evident from the playing of these children (and from the thousands of others observed on three continents) that something is very remiss in the string teaching of today. The great majority of students displayed disturbing signs of rigidity, excessive tension, and lack of coordination. The teaching of good motion techniques has evidently been neglected. Therefore, the string teaching profession should make use of up-to-days principles of good motion behavior by channeling theories and techniques from the fields of dancing and sports, and by studying and applying the principles of kinesiology and physiology, sciences which deal with human movements and efforts.

Research

The Project Director's early training was supplemented by readings in pedagogical and scientific literature, from which passages relevant to the Project are quoted below.

Pedagogical Literature

The following statements by Carl Flesch are among the earliest[1] endorsements of body movements in string pedagogy. He emphasized the importance of good movements in his teaching, as do his distinguished pupils Szymon Goldberg, Louis Krasner, Henri Temianka, and Roman Totenberg.

Carl Flesch, The Art of Violin Playing, Book One: Technique in General, Applied Technique, trans. Frederick H. Martens, 2nd revised ed. (New York: Carl Fischer, 1939).

"The movements of the upper part of the body while playing are in themselves so violent that it is impossible for the lower part of the body

to be unaffected by them. The latter reacts to them with corresponding movement during the temporary shifting of the dead weight, by balancing and 'swinging.'" (p. 14)

Carl Flesch, *The Art of Violin Playing*, *Book Two*: *Artistic Realization and Instruction*, trans. Frederick H. Martens (New York: Carl Fischer, 1930).

"We now come to the most important of bodily hindrances, to the excessive, incorrect or entirely missing rhythmic movements of the body. . . . Their importance is due to the fact that their incorrect employ influences, not so much technique, but the still more important capacity for expression, in an unfavorable manner. If we disregard the more or less craftsman-like movements of both arms, the movements of the remainder of the body while playing may be divided into movements of the head, of the upper, and of the lower body." (p. 92)

"Movement of the lower part of the body. This movement is carried out mainly by the legs; these swing in a more or less noticeable arc in the hip-joints, alternately to the left and to the right. . . . The upper part of the body unconstrainedly and effortlessly accompanies the movement, while the feet do not move from where they are standing. I regard this swaying movement in itself as the most favorable and natural bodily reaction upon the sensations which animate us while playing." (p. 94)

"Correction of bodily stiffness. During my teaching activity I have quite often had an opportunity of observing cases of the kind. . . . I begin with gymnastic exercises without the violin, swaying movements of the hips, far-extended to either side. When the attempt is then made to continue them while playing, an out and out grotesque helplessness at first reveals itself. I advise that spun tones be played in the beginning, letting the body accompany the movements of the bow in the same direction. . . . It is worth while knowing that the direction in which the body sways is dependent upon the duration of the bow-stroke. Accelerated bow-strokes motive an oscillation of the body contrary to the direction of the stroke, because the necessary shortening of the stroke is furthered thereby. In the case of long-sustained tones, however, the stroke would be needlessly shortened by this procedure; and therefore the body, in such case, instinctively moves with the bow." (pp. 94-95)

"The relative prolixity with which the carriage and the movements of the body have been considered in this chapter, is not only specifically meant to emphasize my opinion of the importance of this matter. It is also meant to serve as an intentional reaction against the neglect of the subject by the teaching fraternity. It is quite true that great talents at all time quite unconsciously find the technical means of translation which most appeal to them, and which are most characteristic of their personality. This does not, in the case of those who have to

struggle and strive, in the case of all who do not succeed in gaining their goal at the first attempt, prevent the problem of movement from often forming the wall which brings their development to a standstill. If this hindrance be cleared away, the bodily unfettering which then ensues often brings today unsuspected psychic experiences which, because of the lack of suitable means of communication, had until then lain fallow." (p. 96)

Otto Ortmann, The Physiological Mechanics of Piano Technique (New York: E. P. Dutton and Co., 1929).

". . . in piano-playing very few movements are made in any single plane or direction. Horizontal movements are usually combined with vertical movements. Nor is the change abrupt. Instead, practically all extended movements involve motion in many planes (multi-planar movements), and most frequently in the minute changes of direction resulting in curves." (p. 29)

This statement is applicable to string playing, and this same thought was expressed in the rationale of the original application for this Project, and in the film and manual "Principles of Movement in String Playing."

"1. All movement generated by motion at a single joint is curvilinear.
2. Any motion of a part of the arm in a straight line results from simultaneous movement at more than one joint.
3. Simultaneous motion in two or more joints can generate both rectilinear and curvilinear motion." (p. 290)

"The physiologically best movement is the one permitting motion near the middle of range of the joints involved." (p. 33)

To maintain the middle range position of the joints is one of the important principles in string playing, stressed by Steinhausen as early as 1902.

F. Matthias Alexander, The Use of the Self: Its Conscious Direction in Relation to Diagnosis, Functioning and the Control of Reaction (New York: E. P. Dutton and Co., 1932).

". . . the unity of the human organism is indivisible, and where there is an understanding of the means whereby the use of the mechanisms can be directed in practice as a concerted activity, in the sense I have tried to define, the principle of unity works for good. But there is a reverse side to the picture. It is in the nature of unity that any change in a part means a change in the whole, and the parts of the human organism are knit so closely into a unity that any attempt to make a fundamental change in the working of a part is bound to alter the use and adjustment of the whole." (p. 45)

In his important study, Alexander, a well-known British speech teacher, described his experiments regarding the coordinated functioning of the body and its parts in everyday actions--walking, sitting, rising, using arms, hands, and tools. The Alexander study supports the rationale of every part of this research, which is concerned with the behavior and functioning of the body as a whole. Until physical education will successfully teach young children the correct use of the body, the teachers of special skills (whether dancing, music, or sports) should incorporate in their teaching fundamental principles that will result in the better use of the body.

". . . we must recognize that the attainment of any desired end, or the performance of any act such as the making of a golf stroke, involves the direction and performance of a connected series of preliminary acts by means of the mechanisms of the organism, and that therefore, if the use of the mechanisms is to be directed so as to result in the satisfactory attainment of the desired end, the directions for this use must be projected in a connected series of preliminary acts. If at any point in the series the chain of directions is broken and use misdirected, all the succeeding acts of the series will go wrong, and the end will not be attained in the way desired (for instance, the golfer will not make a good stroke). In most people today the direction of the use of their mechanisms is not reasoned out, but instinctive, and in cases where this instinctive direction leads to faulty use, the connected series of acts preliminary to the gaining of any end will be brought out by a series of instinctive directions operating through faulty use of the mechanisms, so that a series of faulty acts will be the result." (p. 58)

This paragraph asserts the fallacy of an "atomistic approach" which deals only with the motions of the parts without concern for the whole. The Flesch Urstudien (discussed earlier, page 1) is a typical example of this approach. It is questionable whether this work, widely acclaimed and used during the 1920-40 period, has contributed other than detail skills.

Francis Tursi, "Excessive Tension in String Performance," American String Teacher, 5, No. 3 (Fall, 1955), 2, 6-7.

"Because the relationship of the parts is an indivisible one, mid-direction of the voluntary system causes a faulty reaction of the whole structure. If we study man's structure and the way he uses it, we begin to realize that man, not nature, is more often at fault, for as he fails to heed the wisdom of the body or misinterprets it, so does he maintain a standard of functioning, a directed 'use of self' which qualifies all subsequent learning and experience." (pp. 2, 6)

"As teachers we should note how our students (particularly the beginners) use their bodies. This use should suggest our course of procedure. If we fail to do this, we invite increased difficulty or, perhaps, total failure at a later stage. . . . Because posture is fundamental, we should begin with it. In 1932, it was estimated that two out of

three children exhibited faulty body mechanics as a result of their failure to accommodate to erect posture. If posture is poor, breathing, which is so critically important in performance, is certain to be poor also." (p. 6)

"If observation assures us that the student's direction of the use of his body is imperfect, then our first concern should be with its improvement. Frequently, the improvement we seek does not satisfactorily come about when we employ the traditional methods of instrumental pedagogy, for they aim at a specific defect in the belief that the mis-use of a particular part, such as the finger, the wrist, or the shoulder can be corrected independently of the structure as a whole. On the contrary, the parts of the structure are inter-related and react as an indivisible whole. Thus, when we request the student not to stiffen the fingers of the bow arm, and we assign him special exercises to relax them, the resultant improvement in the use of these fingers will usually be accompanied by an intensified misuse of other parts or by a new fault. The defective use of one part is almost always the result of the mid-direction of the structure as a whole." (p. 6)

Frederick F. Polnauer, "Bio-Mechanics, A New Approach to Music Education," Journal of the Franklin Institute, 254, No. 4 (1952), 297-316.

In this article, perhaps the first scientific endorsement in violin pedagogy of the principles expressed by Alexander twenty years earlier, Polnauer also emphasized the need for a new scientific approach to music education with the following objectives:

"1. To improve musical skill and quality, and thus, to raise the average musical skill level.
2. To provide insight into all significant factors which determine acquisition and mastery of skill.
3. To shorten the training time. This is particularly important for the study of string instruments.
4. To establish anatomical-physiological playing methods which will prevent excessive strain, and thus, occupational diseases. . . ."
(p. 298)

"It is a known fact that music educators have, thus far, stayed away from the scientific study of music education, and that they are only barely acquainted with scientific music literature. Instinct, or feeling, is still their supreme guide, which keeps them from occupying themselves with the rational fundamentals of musical skill. As a consequence, our present methods of teaching musical instruments, voice, and conducting depend largely upon arbitrary authority. The lack of rational fundamentals of theory and practice of musical performance, caused through the absence of a scientifically based methodology, is the cause of a very serious inefficiency of training methods in music education. This results, for the average music student, in an excessively long training time and a poor musical skill." (p. 297)

"The basic concepts of synthetical bio-mechanics have already been announced by German physiologists. O. Fischer has interpreted the body as a kinematic chain which consists of six different parts: foot, shank, thigh, trunk, upper arm, and forearm with hand. If one end part, such as the foot, has a definite position in space, every other link of the chain has a predetermined form of motion which is determined by its connection with the other link, according to du Bois-Reymond. . . . Du Bois-Reymond summarizes:

1. *A motion made by one part of the body can be achieved by a variety of motions of the other parts.*
2. *In the case of the selection of a proper motion form, muscle groups which have apparently no influence on the moved extremities can be brought into play.*
3. *The selection of proper motion forms occurs generally through subconscious coordination, but often the use of auxiliary muscles has to be learned.*
4. *It is not only habit derived from practice and experience which prefers certain motion forms by excluding others, but efficient coordination can be, so to speak, mechanically forced by creating pathways in the central nervous system.*

We may thus conclude that bowing of the violin involves the bowing hand, bowing arm, and the rest of the kinematic chain down to the feet." (p. 300)

"The older concept of the arm performing the bowing is being replaced now by the concept of the body performing this function. It seems to us more useful not to think any more in terms of a 'right' and 'left' hand technique, but rather of an 'entire body' technique." (p. 299)

The Project devised a number of "Action Studies" to awaken and coordinate total body action beneficial to bowing and left hand techniques.

Louis Krasner, in a letter to Paul Rolland, dated November 4, 1969, said:

"Your arm balance study focuses on what is perhaps the most important and I think the most critical of our violin (bow) investigations. It (the solution) must eventually be even more pinpointed but certainly your 'key' directs us to the decisive area. . . . Carl Flesch (in his edition of Kreutzer) refers to a mystery concerning détaché and string crossing and suggests further research. The answer to the question he poses lies I think in the area which you call 'arm balance.'

There is no doubt in my mind that he [Flesch] involved himself with it. He pinpointed it in the shoulder--(which suggests itself quite readily). . . .

I would say any part of the hand or arm that is 'locked' impedes playing. Unlocking opens the possibility of playing 'correctly' but one must know how (to unlock). . . .

The elegant, 'airy' détaché stroke that fine players use in Bach is probably made with this kind of rotary arm movement."

The following statements are included here because of their relevance, although the articles did not predate this research.

Henri Temianka, "Bowing Techniques--Part I," The Instrumentalist, 21, No. 10 (March, 1967), 74-76.

". . . activity creates energy; motion produces flexibility. By contrast, immobility, when accompanied by the flexing of certain muscles required to hold the violin and bow, produces tension. Therefore we must be on our guard constantly to forestall immobility and its consequences. We must keep certain key joints, muscles, and limbs flexible and moving." (p. 74)

Temianka, an eminent violinist, states in precise terms the issue that is the main concern of this Project.

James Keene, "Some Physiological Aspects of Playing Instruments," The Instrumentalist, 24, No. 3 (October, 1969), 80-84.

"The standing position, being dynamic, calls for a continual re-balancing of weights within the body. All of us are familiar with the well-known picture of a human being standing in what is generally considered to be perfect posture with a plumb line drawn from the top of his head to his feet, reflecting the perfect balance of the whole body. This perfect balance is of course an ideal and actually accomplished by very few. The pull of gravity as well as physical and psychological factors cause people to fall considerably short of this ideal.

Man, being created for outdoor living by nature and self-adjusted to city comforts, deprives himself of his proper exercise. He contributes to this general misuse by stylistic furniture and poor chairs which encourage bad posture. As a result, he weakens muscles which may contribute to his poor body usage. Balances that are not correct cause the weights of the body to be thrown on the ligaments or connecting tissue thereby causing excessive fatigue, aches, and pains, and--as some believe--the premature wearing out of the organism and susceptibility to disease." (p. 81)

These principles are demonstrated in the Project film and manual "Establishing the Violin Hold."

Scientific Literature

Many of the principles of efficient movement described in the writings of kinesiologists and scientists can be applied advantageously to string playing. The statements quoted and commented upon in this section are considered important samples of the relevant literature with definite bearing on the introductory Project film "Principles of Movement in String Playing," and on the Project as a whole. Included are writings well-known by the Project staff before the beginning of the research, and works studied during the course of the Project.

M. Gladys Scott, Analysis of Human Motion: A Textbook in Kinesiology (New York: F. S. Crofts and Co., 1942), p. 7.

"When a certain muscle or group of muscles is stimulated, the antagonists of those muscles are ordinarily allowed to relax. This process of maintaining relationship between two sets of stimuli is referred to as reciprocal innervation." (p. 76)

This statement is related to one of the most common faults in string playing: an unskilled player tends to change bow abruptly. The muscles which are used during the down-bow should be allowed to relax substantially before the up-bow is initiated.

". . . proper coordination of muscles results in a graceful, easy, skillful, and economical movement. The stiff, awkward, jerky performance has usually too much muscular force, is uneconomical and ineffective." (p. 140)

Frances A. Hellebrandt and Elizabeth Brogden Franseen, "Physiological Study of the Vertical Stance of Man," Physiological Review, 23 (1943), 220-255.

"When the feet are together, the stance is unsettled. Turning the toes out to an angle of 45° or separating the feet . . . steadies the stance." (p. 225-226)

The Project advocates this recommended "V" position of the feet and slight space between the heels.

"Postural sway is inseparable from the upright stance of man." (p. 227)

In the Project, this natural sway is encouraged to promote relaxation.

Josephine Rathbone, Corrective Physical Education (Philadelphia: W. B. Saunders Co., 1949).

". . . the whole cannot function efficiently if any part is out of alignment. Whereas, when the units of weight of the body are in perfect alignment, there is the maximum freedom of action with the least possible muscular effort; when there is faulty adjustment at one joint, a mechanical readjustment is necessitated elsewhere, resulting in an increase in muscular effort and strain." (pp. 8-9)

"For proper movement, as far as the muscular system is involved, several conditions are necessary; the possibility of complete motion in all joints, ability to relax any muscle while its antagonist contracts, and

ability of certain muscles to hold the right degree of tension to make certain joints stable so that others may be free for movement." (p. 11)

"The mechanical maladjustment, resulting from foot imbalance or reaction to pressure, is felt in the body above. A person with weak or strained feet will often complain of pain in the muscles of the calves, thighs, hips or back. These complaints are to be understood when one considers the relationship of the foot to the structures above." (p. 23)

". . . a vertical line dropped from the center of gravity passes just in front of the knee and ankle joints and touches the ground within the area between the feet--the underpropping area. In stable equilibrium the spine should function as a poised column with the weights distributed around it. In most cases the line through the center of gravity should pass in front of all the vertebral joints, except the upper cervical and upper lumbar, and between the ischia and necks of the femurs. The normal inward curve of the spine must be preserved in the lumbar region and the shoulders must be permitted to hang slightly backward in an easy position favorable to deep breathing. In this position the chest will be naturally expanded, not awkwardly stuck forward. The head will balance easily.

Any departure from the balance described above will mean strain of muscles and ligaments and friction in joints and, if one segment is out of line, all others will be affected." (pp. 77-78-79)

". . . the body is subject to less static strain during any movement than during the maintenance of equilibrium, because of the constant changes in position." (p. 87)

The statements of Josephine Rathbone have important implications to the string player. They reaffirm the need for consideration of the whole body for the correct performance of movement of any part, and underscore the need for emphasis on correct stance and positioning of the feet.

L. E. Morehouse and J. M. Cooper, Kinesiology (St. Louis: C. V. Mosby Co., 1950).

"In the slow-controlled forms of movement the antagonistic muscle groups are continuously contracted against each other, giving rise to tension. When antagonistic muscles are in contraction and balanced against each other, tremors occur." (pp. 194-196)

This is significant in the study of slow sustained strokes, which require continuous control of the opposing sets of muscles. Slow strokes require a certain amount of tension and more intense holding of the bow.

Normally, one set of muscles dominates the other; if the opposite sets of muscles contract simultaneously at equal degree, stiffness and tremor result.

"A ballistic movement is begun by a rapid initial contraction of the prime mover, proceeds unhindered by antagonistic contractions, and is followed by a relaxation of the protagonist while the movement is still in progress. During such a light movement as throwing a baseball, the antagonist progressively increases in activity during the throw, indicating co-contraction. In comparison with the activity of the prime movers, however, the tension in the antagonists is very slight during the ballistic type of movement.

One of the greatest differences between skilled and unskilled movements centers around changing tension movements to ballistic movements. Attempts to make ballistic movements with movements that are already fixed are fatiguing. Tension in one group of muscles necessitates an increase in the intensity of contraction of other sets of muscles. The spread of intensity results in rigidity which is wasteful and restrictive." (pp. 194-196)

This is a most important statement and is closely connected with all the exercises calling for free cyclical movements. The Project films and manuals "Extending the Bow Stroke," "First Steps in Vibrato Teaching," "Developing Flexibility," "Martelé and Staccato," and "Bouncing the Bow" embody this principle.

"First attempts at complex movement are made through continuous attention to the visual, touch, and proprioceptive sensations. . . . The highest level of skill is achieved only after conscious effort has been eliminated. The backhand grip in tennis feels somewhat strained at first and attention must be given to it until it is learned. . . . Attention to muscle or joint action during an action will serve only to interfere with the performance." (p. 210-211)

This statement relates to the automatic action and conditioned reflexes necessary in learning a skill or repertoire. Thinking about the movement during performance hinders coordination. However, this does not mean that thought process during the learning period is not desirable.

"The speed at which a skill is first practised should be approximately that of the speed at which it is to be used later." (p. 214)

This is an important principle and is generally disregarded by string teachers, who tend to slow down actions for the sake of note reading. It should be remembered that slow movements are basically different in character from fast motions, and that the slow practicing of fast passages is beneficial only for the sake of intonation and accuracy, not for technical achievement and fluency.

"Extension of the fingers is associated with spreading of the fingers. Flexion draws the fingers together. The extrinsic muscles of the hand control the gross movements of the fingers." (p. 72)

Sections of the Project film and manual "Principles of Left Hand and Finger Action" reflect this statement.

"The act of throwing involves a transfer of momentum from the body to the object to be thrown." (p. 318)

"The action of the forearm is the critical factor in throwing. Here is where the momentum of the heavy upper arm, shoulder, and the trunk is transferred through the forearm to the light lever of the hand." (p. 324)

Although visually the forearm action appears to be the dominating movement in violin playing, these statements emphasize that the source of this important movement is in the larger parts of the body.

"When momentum is transferred from a heavy to a light object, the speed of movement of the light object will be greater than the speed of the movement of the heavy object. . . . The speed of movement is continually increased as the momentum passes along these body segments (trunk, shoulder girdle, upper arm, forearm, wrist-palm, fingers) from the trunk to the fingers." (p. 324)

This statement relates to all "sequential movements" in string playing.

"The fingers are flexible, yet are firm and strong. They are sensitive and serve to furnish the finer elements of control and accuracy. . . . All of the forces from the many parts of the body accumulate in the fingers. . . . The strongest and most deft of all fingers, the forefinger, executes the final impulse of the throwing motion. The dominance of the forefinger is present in all throws in which great force is the desired objective." (pp. 325-326)

The fingers have a similar function in string playing; they refine movement and exert control over the bow.

L. E. Morehouse and A. T. Miller, Jr., Physiology of Exercise, 3rd ed. (St. Louis: C. V. Mosby Co., 1959).

"The development of motor skills is a complex process. In the beginning attention must be devoted to the component movement; the performance is controlled by the motor area of the cerebral cortex. Constant attention is also necessary in the adjustment of the strength and extent of movements requiring the correlation of visual and proprioceptive data. With practice, the proper sequence of movements is 'learned' and control of the act is transferred to the pre-motor area; attention is no longer required. At the same time the correlation between visual and proprioceptive data has become so exact that the former are no longer necessary we are able to perform 'blindfold'; that is, we are guided entirely by proprioceptive information." (p. 45)

"The shift in attention from the elements of a task to the signal which is the stimulus for the action to take place is the essence of motor learning. During the training process the action becomes automatic, and the performer ultimately can block out the symbolic process. In

this way, he gains the swiftness and positiveness of a nonhuman animal. From the point of view of maximum performance and efficiency, the symbolic system is an element to be opposed." (p. 56)

"THE THOUGHT PROCESS IN HUMAN MOVEMENT

IN THE EXECUTION OF A SKILLED MOVEMENT, THOUGHTS ABOUT IT DURING THE ACTION ARE INTOLERABLE. CONCENTRATION IS GATHERED ON THE WHOLENESS OF THE ACT, NOT UPON THE PARTS NOR UPON THE CONSEQUENCE OF THE OUTCOME." (p. 55)

The Project's "Action Studies" allow the student to concentrate on position and movement training without the distractions of note reading and other tasks required during performance.

"Voluntary Control of Movement:

Volition controls the whole movement, not the action of single muscles.

Any movement, whether it is striking, jumping, lifting, pulling, throwing, or falling, requires a concentration on the movement and demands a disregard of the muscle action. The golf instructor who points out how the muscles should be acting during the swing of the club will soon have his pupil in the state of the centipede who:

> *'Was happy quite,*
> *until a frog in fun said,*
> *"Pray which leg comes after which?"*
> *This wrought her up to such a pitch,*
> *She lay distracted in the ditch,*
> *Considering how to run.'" (p. 77)*

"The closer a load is placed to the fulcrum, the greater is the mechanical advantage. The further a light object is held from the fulcrum, the greater is the advantage for speed. A lightweight ball is thrown with the arm extended while the heavy shot is put from close to the shoulder." (pp. 78-79)

Consider this in reference to bowing: near the frog we can play with the greatest power, near the tip with the greatest speed.

"The speed of the movement of the load effects the maximum load which can be moved. Heavy loads can only be lifted slowly. If a fast movement is required, the weight must be light. A heavy weight can be moved faster if it is held closer to the fulcrum."

There is a limit to the "load," that is, bow pressure, that can be tolerated in fast playing.

"Less power is necessary to change the direction of a moving object if the object is kept moving than if the object is brought to a stop before

it is moved in the new direction. The turn in swimming is a short circle, not an abrupt reversal of the direction of the movement." (p. 79)

This is a very important statement in relation to string playing. It relates to all bow changes, attitudes during rests, and shifting techniques. To keep moving, to follow through, to make curved changes is the key to a smooth technique. (Stop-and-go driving uses too much gas!)

"While there is some uncertainty as to the extent to which the acquisition of one motor skill influences performance in another activity ('carry-over of motor skill'), there is no doubt that almost any type of training improves general neuromuscular coordination. The functional efficiency of the nervous system is also benefitted by the general improvement in other systems of the body. This is reflected particularly in an increased mental alertness and zest for meeting and solving the problems which arise in the course of daily life." (p. 302)

This statement points to the wisdom of practicing scales and exercises, even if they are not related to a specific repertoire requirement.

"There is a best way to perform any task. . . . A few of the principles which have been found to be of importance in improving performance are:

1. *Momentum should be employed to overcome resistance.*
2. *Momentum should be reduced to a minimum if it must be overcome by muscular effort.*
3. *Continued curved motions require less effort than straight-line motions involving sudden and sharp changes in direction.*
4. *Movements in which the muscles initiating movement are unopposed, allowing free and smooth motion, are faster, easier, and more accurate than restricted or controlled movements.*
5. *Work arranged to permit an easy and natural rhythm is conducive to smooth and automatic performance.*
6. *Hesitation, or the temporary and often minute cessation from motion, should be eliminated from the performance." (p. 80)*

These principles are emphasized in the context of a number of the Project films and manuals, especially in "Extending the Bow Stroke" and "Developing Flexibility."

"Work is accomplished at a faster rate if component movements are in a continuous curved rate than if movements involve abrupt changes of direction." (p. 67)

This principle is most important in string crossings and bow changes, and supports the well-known principles of "Round Bowing" advocated by Ysaye.

"Horizontal motions are more rapid than similar motions in a vertical plane." (p. 67)

This principle reinforces the Project's view that excessive slanting of the violin (which causes the bow to travel in a more vertical plane) is not desirable.

"Movements are made more quickly and accurately with the right hand. . . in a counterclockwise direction, and with the left hand in a clockwise direction." *(p. 68)*

This is fortunate, because it aids the beneficial inward arching of the bow stroke advocated in the Project.

"The level of muscular tension habitually exhibited by a person characterizes him as a tense or relaxed person. Too much tension makes movement jerky, awkward, and often painful. Too little tension makes movement weak and unsteady."

Although the main concern of the Project was the release of excessive tension, the inferior playing of some students is caused by weakness or extreme relaxation. Therefore, the Project devised "Action Studies" designed to firm the bow hold and intensify the vibrato.

". . . learning and perfection of skills can proceed through reading and thinking about the technique of the event. Thus, a golfer during the winter season may improve his swing by studying texts written on the subject. Divers commonly repeat in their imagination the movements of a new dive before attempting to perform it. . . ." *(p. 69)*

This important statement underlines the need for an inner concept of performance: ideation. Many artists testify that they learn and memorize away from the instrument. With the young learner, the use of imaginative and colorful sensory imagery is recommended ("smooth as velvet," "let your right arm float," etc.).

Recent Scientific Literature Postdating the Development of the Project Materials

The quotations below are included to focus attention on the need for further interdisciplinary research by string teachers. Recent findings of specialists in physiology, biomechanics, motor learning, and kinesiology await further study and application by the string teaching profession.

The following statements by Hellebrandt, Grandjean, Brown and Cratty, and Logan and McKinney support the philosophy behind the Project's "Action Studies," which are designed to provide rich and varied positional and manipulative sensory exercises.

Sensory inputs (reading notes, listening to an example played, seeing and feeling a movement demonstrated), subconsciously integrated with stored sensory experiences, lead to the playing actions. These, in turn, are subconsciously evaluated, graded, and instantly and subconsciously modified in performance. All of these events take place within a time span so infinitesimal that their willful control is not possible.

F. A. Hellebrandt, "The New Approach to Violin Playing," The Strad, 80 (October, 1969), 277-281; 80 (November, 1969), 305-311; 80 (December, 1969), 361-365; 81 (January, 1970), 421-431; 81 (February, 1970), 473-479.

The Project staff is indebted to Frances Hellebrandt, M. D., the eminent biological scientist, for her interest in and appraisal of the Project materials. (Dr. Hellebrandt's appraisal is presented in Chapter Nine.)

"When the various schools of violin playing came into being fixed ways were introduced of manipulating the bow, positioning the left hand, of standing, and of holding the instrument. Not enough was known then of neuromuscular physiology and living anatomy to interpret the significance of overt responses which may have had their origin in unsuspectedly distant part, or to speculate on how phylogenetic skills may be modulated ontogenously. Little was known about the expansion of motor patterns under stress, the individuation of partial patterns as a result of practice, the influence of proximal tensions on the distal components of total limb synergies and vice versa, or the mechanisms underlying the transfer of the physiological effects of training to muscle groups of the opposite side. We know now that afferent inputs from muscles, tendons and joints, as well as the exteroceptive and special senses, reverberate within the central nervous system in ways which influence man's affective state and his motor responses. The latter embrace the musculature of the body as a whole, integrated into a system of inter-related parts, and not only the muscles engaged in the performance of the overt act willed by the player. Even the delicate modulation of the latter in the brilliantly controlled playing of the virtuosos creates a grand entente of prime movers, antagonists, synergists and fixators which is much more complex in its design than anything imagined by the naive observer." (pp. 277-279)

"Standing does not require cortical direction. It therefore provides an ideal activity during which to learn how to arouse an inner state simulating 'functional decortication.' Indeed, until the mindless operation of postural mechanisms is established through volitional subjugation of cortical interference, the evolution of effortless and graceful natural movements over automatic primordial pathways is impossible. The importance of this preparatory teaching device cannot be overestimated. It is the substrate for much that follows.

The alignment assumed spontaneously is very similar in all individuals, irrespective of build. The feet are separated, the knees bend and the small of the back flattens. The arms hang loosely and the shoulders droop. The head and neck project forward. The stance is easily visualized by the child as gorilla-like. Gorilla stance becomes a key *cue capable of evoking dynamic relaxation in the vertical posture. How this is accomplished is left to the automatic running of the machine. It succeeds because once cortical control of postural patterning is lifted, what happens is pre-set in the inborn mechanisms fashioned during man's evolutionary assumption of the biped stance."* (pp. 279-281)

E. Grandjean, Fitting the Task to the Man: An Ergonomic Approach (London: Taylor and Francis, 1969).

"Automatism: conditioned reflexes

Acquisition of the ability to perform a skilled operation requires the formation of new reflex pathways for control mechanisms which function without conscious guidance (conditioned reflexes). . . .

Thus, skilled performances are for the most part functions of automatic control. The task of the conscious mind is to supply concentration, in other words to limit all nervous activities other than those directed towards the skilled activity." (p. 301)

Roscoe C. Brown, Jr. and Bryant J. Cratty, eds. New Perspectives of Man in Action (Englewood Cliffs, New Jersey: Prentice-Hall, 1969).

"Basically, then, four steps are involved in the performance of a perceptual-motor behavior. These may be described as: (a) sensory synthesis, or the processing of present stimulus information; (b) sensory integration, or the integration of present with past sensory information; (c) effector activity, the movement; and (d) sensory feedback and comparative operations. . . .

The foregoing formulation suggests then:

1. *that perceptual-motor performance may be conceived of as a complicated, overlapping series of sequences of sensory-motor-feedback events.*
2. *that there may be, grossly, two such highly interrelated programs of events common to most gross motor performances: those leading to the positioning of the body in space, or positional events, and those leading to proper manipulation of smaller body parts of implements, manipulative events.*
3. *that the success of the total motor performance is dependent upon the integrity of each step in the cycle but more particularly upon the integrity of the sensory processes involved in [initial sensory activities]."* (p. 70)

Gene A. Logan and Wayne C. McKinney, Kinesiology (Dubuque, Iowa: William C. Brown Co., 1970).

"Voluntary muscle movements are the result of a complex relationship between the muscular and central nervous systems. Muscular movement patterns are initiated at various levels within the central nervous

system. The quality of movement, in part, is dependent upon the neurologic information fed back from proprioceptors within muscles and joints to the higher brain centers. This information returning to the central nervous system from the periphery includes 'data' concerning tension of muscle fibers, joint angles, and position of the body part being moved. This is analogous to computer systems now in use involving electronic servomechanisms. Thus, volitional movement is autoregulatory.

One of the major purposes of training is to assist the athlete in refinement of the neuromuscular integrative functions related to sensory information 'fed into' the central nervous system. This information is coming from the eyes, ears, nose, skin, joints, and muscles." (p. 62)

J. V. Basmajian, in a letter to Paul Rolland, dated September 10, 1970, said:

"There is no doubt that your appreciation of the rotary movements of the arm is complete. Surely your experience as to the results is the telling point!--the application of the theory yields improved results. What more can be demanded? As for turning the problem around and trying to prove that the improved quality of playing due to applying specific movements is in turn due to these movements being 'scientifically' more sound: here we get into some trouble. In our work, especially in the book Muscles and Movements MacConaill and I concentrated on showing what are habitual movements--not ideal movements. You obviously have found that modification of dogmatically taught movements give a better response because they fall into the more natural patterns which include rotary components with the apparent flexion-extension movements."

Correspondence with Dr. Basmajian was prompted by the discussion of humeral rotation on page 38 of the book mentioned above (M. A. MacConaill and J. V. Basmajian, Muscles and Movements (Baltimore: Williams and Wilkins Co., 1969). Humeral rotation is a crucial element in the bowing and vibrato techniques advocated and filmed by the Project.

Ottó Szende and Mihály Nemessuri, The Physiology of Violin Playing (Wellingborough, England: Collet's Holdings, 1971).

"Cycle series resemble circular motion in that cycles have no definite beginning, except the first one, and have no definite end-point except the last one. . . . Cyclical movement represents the simplest form of motion, so that it can be quickly and easily mastered and automatized. Since the inertia momentum has a significant part in the linking of motion phases and cycles, bringing about abrupt stoppage is rather difficult." (p. 16)

This recent study reaffirms many of the major points of emphasis in the Project. Cyclical motions were stressed and demonstrated in the Project film and manual "Principles of Movement in String Playing."

". . . 80.6 per cent of the inspirations occurred during or immediately before an upbow and only 19.4 during a downbow stroke. . . ." (p. 100)

". . . the weightlessness of upbows is accentuated by a coincidence with inspiration." (p. 102)

Szende and Nemessuri offer an extensive study on breathing in violin playing, an area not investigated by this Project. (It was assumed that natural breathing could be maintained by the beginner who is well-postured and whose movements are free from excessive tension.) The influence of breathing on string performance is a topic which deserves consideration by string teachers.

Other Literature

Eugen Herrigel, Zen in the Art of Archery, First Vintage Books Ed. (1953, rpt. New York: Vintage Books, 1971).

"'The right art,' cried the master, 'is purposeless, aimless! The more obstinately you try to learn how to shoot the arrow for the sake of hitting the goal, the less you will succeed in the one and the further the other will recede. What stands in your way is that you have a much too willful will. You think that what you do not do yourself does not happen.'"

This little book on a seemingly remote subject has implications to the string student. It stresses the patient building up of skills without "end-gaining." The actions must be distilled to a subconscious level of operation; volition in the details of actions is avoided. The references to the technique of breathing are particularly helpful to the advanced player.

Chronological List of Articles and Publications Relevant to the String Research Project

Rolland, Paul. "The Teaching of Strings." Music Educators Journal (April, 1947), pp. 34-38, 58-59.

Discusses principles, problems, and techniques of class teaching.

(a) Stresses the importance of rote teaching.
(b) Suggests tapping of rhythms
(c) Advises the use of upper fingers in the beginning stages of instruction
(d) Advocates that the teacher circulate among the students to give manual assistance.

________. Problems of Violin Playing and Teaching. Bulletin No. 4. Urbana, Ill.: Division of University Extension, 1947.

Discusses correct position of instrument and bow, left and right hand techniques, bowing movements, tone production, and equipment.

(a) Advises preparation of the bow hold with a stick or pencil.
(b) Advocates holding the left hand in third or fourth position during all open string studies.
(c) Advocates introduction of position playing through rote exercises.

________. *String Epidemics: Typical Faults in String Playing and Their Correction*. Bulletin No. 14. Urbana, Ill.: Music Extension, Division of University Extension, 1948.

Offers suggestions for solving problems of rhythm, intonation, and bowing.

________. "Begin in the 3rd Position?" *American String Teacher*, 2, No. 1 (1952), p. 7.

Examines advantages and disadvantages of this approach. Recommends left hand pizzicato drills in positions.

Applebaum, Samuel and Sada. "Interview." *Violins and Violinists*, 20, No. 6 (1959), pp. 245-249.

Discusses regularity, speed, and amplitude of vibrato. Explains the well-coordinated vibrato movement, and gives suggestions for teaching it.

Rolland, Paul. *Basic Principles of Violin Playing*. Washington, D. C.: Music Educators National Conference, 1959.

A practical manual on violin teaching offering fundamental principles generally agreed upon by the teaching profession and original solutions to typical problems.

The following are related to the Project:

(a) Emphasizes natural, relaxed hold of instrument and bow.
(b) Suggests silent bow exercises.
(c) Suggests placement of left hand in the third or fourth position when teaching the violin hold.
(d) Stresses importance of posture, and describes correct standing and sitting positions.
(e) Advocates placing bow at balance point for first bowing exercises.
(f) Describes sequential movements during the bow change.
(g) Defines elevation, angle, and balance of left hand.
(h) Suggests silent left hand "percussion" exercises.
(i) Advocates curved bowing motions.
(j) Describes the coordinated vibrato.

________. "A vibrató tanításáról" (On the teaching of vibrato). *Parlandó* (Budapest, March, 1961), 3.

________. "Violin Practice and Performance." *International Musician*, 61, No. 3 (December, 1962), pp. 24.25.

Discusses intonation problems. Suggests practicing scales with a drone ("reference tone") supplied by another player.

________. "The Training of the Instrumentalist." Comparative Music Education, International Society for Music Education (Mainz: B. Schott's Söhne, 1962), pp. 202-208.

Discusses the role of class teaching in American music education.

________. "Bow Pressure." The Instrumentalist, 18, No. 2 (1963), pp. 80-82.

Distinguishes between the pressure received by the string and that applied by the right arm. Discusses "player's pressure," "negative pressure," and principles of leverage. Advocates use of upper arm rotation to support bow weight and supply bow pressure.

Wassell, Albert W. "An Interview with Paul Rolland." American String Teacher, 18, No. 2 (Spring, 1968), pp. 14-16.

Included in Appendix B of this Report.

Rolland, Paul. "Innovations in String Teaching." Orchestra News, 8, No. 2 (March, 1969), pp. 6-7.

Included in Appendix B.

________. "Urbana, Illinois String Research Project Demonstration in Cincinnati." American String Teacher, 19, No. 1 (Winter, 1969), p. 25.

Included in Appendix B.

Arazi, Ishaq. "Pied Piper of Urbana." American String Teacher, 19, No. 3 (Summer, 1969), pp. 12-17.

A profile. Review of Paul Rolland's background and philosophy of teaching. Discussion of University of Illinois String Research Project. Included in Appendix B.

Rolland, Paul. "Arm Balance: A Critical Element of Efficient Bow and Vibrato Technique." The Strad, 24, No. 6 (January, 1970), pp. 55-59.

Stresses the importance of humeral rotation in repetitious actions such as détaché, sautillé, and vibrato.

Footnotes

[1] Flesch's The Art of Violin Playing, Book One was first published in 1932; Book Two was first published in 1928, both by Ries und Erler, Berlin.

CHAPTER THREE

PRELIMINARY INVESTIGATIONS

The Teaching of Kató Havas

Background

In August of 1966 the Project Director visited Dorset, England to observe the teaching of Kató Havas. More than a library investigation of Miss Havas' methods appeared advisable, since her work had been acclaimed in many articles in the English magazine, The Strad. These writings and Miss Havas' books[1] indicated that her teaching was similar in many respects to the approach conceived by the University of Illinois String Research Project. This similarity was not surprising, since both Miss Havas and the Project Director were trained at the Academy of Music in Budapest where their major teacher was Professor Imre Waldbauer.

Professor Waldbauer's teaching was influenced by Steinhausen's book, Die Physiologie der Bogenführung, first published in 1902. A major tenet of Steinhausen was the leadership of the upper arm in violin movements, with the wrist, hand, and fingers assuming a relatively passive role.

Waldbauer was a musician of the highest order. He was founder of the Waldbauer-Kerpely quartet before World War I and was the sonata partner of Béla Bartók and Ernest von Dohnányi. The quartet became one of the avant garde groups which toured not only in Hungary but also in most of Europe. They were among the first to present Debussy's and Ravel's string quartets and, of course, those of Bartók and Kodály. Both Bartók and Kodály dedicated works to Mr. Waldbauer and his quartet.

Although Waldbauer was internationally known as a quartet player, as a violin teacher he was very much interested in establishing good tone production through correct motion patterns. His own instinctive "Gestalt approach" always made him look at a student in his totality. To him, the playing movements and motion behavior of a student was just as important and interesting as a delicate naunce in a phrase of a Beethoven quartet. In his master classes (as in most European conservatories this was the only format of instrumental teaching), he drew analogies between violin playing and art, literature, sports, engineering, psychology, and everything that would arouse the curiosity of a man who was interested in everything.

Waldbauer's violin teaching was analytical (he also taught the string pedagogy course at the Academy) and meticulous when he taught tone production, flexibility, and good movements. It was unusual for a student to play more than a few measures before being stopped for an illustrated lecture on the various aspects of the particular techniques involved, especially those dealing with relaxation, motion patterns, comfort, and well-being. His main attention was always directed to the to the upper arm, its role in the movements, and its relationship to tone production. This was the background from which Miss Havas and the Project Director, as well as the many other graduates of that school, started their careers.

Kató Havas Film

Before the visit, the Project Director commissioned Miss Havas to prepare a film on her principles of teaching. This film was to provide information for the personnel, cooperating teachers, and consultants of the Project.

In the spring of 1966, Miss Havas sent a rough draft of her proposed film synopsis to the Project Director, who reviewed it without interfering with Miss Havas' intentions or ideas. The film, in which Miss Havas assumes the role of lecturer, was produced on July 21 and 22, 1966. The first viewing took place during the Project Director's visit to Miss Havas' violin school in Dorset, England in August, 1966. The narration is presented below.

Narration of the Kató Havas Film

I wonder if there is any other field of music which offers as many systems and causes as much controversy as violin playing, or whether there is any other instrument which can arouse as much love or frustration as may exist between the player and his violin. Of course, the aim of every violinist is to achieve such relaxed control and coordination in handling the violin and bow that he is able to release the full force of his musical imagination without the hindrance of physical obstacles. But before trying to see how it is possible to achieve this effortless coordination, let us look at the problems every violinist encounters regardless of age or ability, and how these problems by their very nature are apt to become veritable hotbeds of tensions and anxiety.

First of all, there is the hold itself, which becomes a disturbing element even with the most experienced player, especially when confronted with technical difficulties. Then there is the left arm. What most violinists tend to do here is to turn the elbow to the right to help support the violin and to turn the forearm to the left to reach the fingerboard. If we didn't happen to be violinists and were told to stay in this position for hours on end, we would not hesitate to call this a medieval torture.

Then there is the question of the left hand. Here a hand twisted to the left is often the result of the twisted forearm which indicates a continued anxiety to reach the strings, especially the G string. Then in the desire to produce a large sound there is a tendency to lift the fingers vertically and press them into the string. When this happens there is immediate counterpressure from the thumb with an inevitable stiffening of the thumb muscles and wrist. This, of course, becomes a great obstacle when playing with the little finger, or when attempting fast passages, double stops, trills, etc., not to mention change of position and glissando.

As for the vibrato, this seems to be one of the greatest problems and a question quite by itself. Is it going to be a finger vibrato, a wrist vibrato, an arm vibrato, or all three together? And just how does one go about learning it?

On top of all these problems there is also the bowing arm with the task of smooth bow change, effortless détaché, spiccato, martelé, etc. The question of how to coordinate all these problems into an effortless whole, so that the player is not beset with continuous technical details, has occupied teachers for centuries. Here is one version of the solution which I hope may be of some interest.

Let us begin with the stance. The violinist is obliged to stay in a standing position for very long periods. It is therefore extremely important to find as comfortable a stance as possible. To counterbalance the jutting forward position of the violin, a tilting backward position of the body, without bending the spine, immediately releases a certain amount of conscious or subconscious anxiety. Due to the complicated and manifold physical movements violin playing demands, the player tends to diffuse his attention into too many sectionized actions, which is an impossible task and produces much anxiety. However, if he learns to focus the attention only on the absolute source of movement, this can create enough motivating power to achieve optimal coordination. For example, the motivating power in each arm lift is in the shoulder blade. If the shoulder blade were to stop functioning, it would be impossible to lift the arm and once the player is aware of this power, it is extremely important to use it to the full. It makes an enormous difference to the player's well-being whether he lifts his arms from the hand and forearm, which feels heavy and would soon be fatiguing, or suspends them from the shoulder blade so they feel weightless. This goes for the violin hold as well. The cause of the contact between the chin and chin rest is the lowering of the head, which also involves the last vertebra of the spine. So in order to avoid gripping with the chin, the whole head should be lifted and dropped onto the chin rest. It is the weight of the crown of the head which gives the feeling of security, especially if it falls with a backward drop to continue the backward tilt of the stance. And in order to avoid tension or anxiety with the left upper arm and with the violin hold, the following exercises are a great help. (Demonstration of exercises.)

As for the bow hold, seeing that no two hands are built alike, it is impossible to follow any hard and fast rules, but there is a basic principle which helps to avoid gripping the bow, regardless of the size or build of the hand. If the arm hangs loosely by the side of the body, the chances are that the fingers and thumb will touch the middle part of the middle finger creating a circle. It is very important that the elbow and the wrist are completely loose. With the circle kept in the same position, the arm is thrown from the shoulder blade (which is the motivating power) into the suspended floating position, so it feels weightless with the circle tilted upwards. Insert the bow into the circle between the tip of the thumb and the middle part of the middle finger and let the other fingers fall on the stick as they feel most comfortable, and if the bow feels weightless, you have an effortless bow hold. It is very important to make sure that the thumb goes on its very tip so that the joint bends outward and is in touch with the ferrule. It should not be pushed out, because that immediately stiffens the muscles underneath. It is the hair which should be twirled towards it. There is often a tendency to close the finger pads over the bow, which is a dangerous procedure because it immediately develops into a grip with disastrous effects on a free wrist movement.

Now in order to retain the feeling that there is no actual bow grip even in a playing position, take the left hand to the hair and then turn the whole arm from the shoulder blade into the floating position. Let go with the left arm, and if the movement was really from the shoulder blade which takes the weight of the arm, the player still feels that the bow is as light as a feather and is a mere continuation of the arm. This feeling of weight in the shoulder blade and the outside of the upper arm becomes important when playing at the nut, because in order to avoid a crunchy sound by the weight of the hand on the string, the tendency is either to lift the hand with the bow in it (which by its very rigidity becomes the cause of a great deal of anxiety), or one wants to turn the wrist away (which by its insecurity is another source of anxiety). The feeling of weight in the back is the motivating power of the arm movement, and with this the anxieties, both physical and psychological caused by concentration on the forearm and wrist, are released, and thus the playing at the nut becomes a self-propelled coordinated action. The direction of this self-propelled action in the down-stroke is in the shape of an upward arc with the arm opening in front of the body. This way at the tip, which is the lightest part of the bow, the natural weight of the arm is transmitted on the string without any superimposed pressure. The stroke itself, because it follows the shape of the arc, follows the arc of the bow on which it returns with the up-stroke creating new disturbance in the thumb. In order to allow this self-propelled action to continue in the up-stroke, it is extremely important for the upper arm to return to its original position, that is, back to the side of the body and then downwards to take on the weight of the forearm and bow again, still following the shape of the arc so that there is a smooth bow change at the nut as well.

Once this full length stroke is established it can encompass the whole bowing technique. It is only a question of different length and speed; the principle of the motivating power creating optimal coordination, remains the same no matter what the stroke is. Also, once the self-propelled bowing with the motivating power and optimal coordination is established, it becomes such a natural movement that the player can forget about it. It will be able to follow the lead of the left hand, that is, if one can establish the motivating power and the optimal coordination there also. If the feel of a suspended arm is established and if there are no twists to the right or left, the various anxieties concerning intonation, vibrato, etc. are well on the way to being released, because if the upper arm is free to move there is a general release through the wrist and hand.

Let us turn to some problems of the left hand. In order to achieve a free finger action, it is important to realize that the motion of the tip of the index finger, falling on the side of the thumb, creates the opening and closing of a circle. The creation of the circle is one of the most important points in violin playing because it establishes a forward action from the base joint, which in turn prevents the clamping together of fingers and thumb around the fingerboard. Also if the finger action is a forward movement aimed for the base joint, the point of contact with the string is on the side of the tip.

These movements also encompass large natural spaces between the fingers, so the little finger is released from continuous necessity of having to stretch. As the finger action is controlled by the power of the base joints, the touch of the finger on the string is light and sensitive, because the very distance between the base joints and string makes an immediate pressure on the fingerboard impossible. This immediately eliminates the necessity of the counterpressure from the thumb, so it is free to move simply as a reflex action to the various movements of the other fingers, which will be an enormous help in fast passages, especially when playing with the little finger.

This particular pupil who helped to demonstrate these ideas started to study the violin only four months ago. If he continues to concentrate on the forward action of the base joint underneath the neck, the strong resilient feeling in the hand will go on developing. This continuous resilience and feeling of freedom in the hand, combined with a sensitive touch on the fingerboard, will eliminate the necessity of having to learn the vibrato as a separate entity. It will become the natural outcome of tone production without any artificial oscillation or shake. All the principles of the motivating powers apply at an advanced stage as well. For example, if the right arm achieves a self-propelled, coordinated action, it is free to change from one bowing to another.

The same principles apply to the shifts too. If there is no artificial finger pressure on the string and, as a result, no pressure from the thumb, the base joints are free to aim and then shoot into the desired position with one coordinated action. And it is the same with the trills and double stops. The weight should always be on the base joint of the lower finger, that is, the first or second, because that releases the tension in the weaker third and fourth fingers. In order to get the feeling of balance, it is a good thing to practice the lower note alone first and then add the trill. The same practice applies to the double stops. Separate them first, always starting with the lower sounding note, and then combine them with the weight continually on the lower base joint. And with these principles, the hand remains supple and resilient even when the trill and double stops are combined.

Of course, these are only the barest examples of the functions of the motivating powers with their optimal coordination. And of course there are no rigid rules. The actual application differs with each individual as each person is built differently.

But the principles always remain the same and may prove to be helpful to a great variety of individuals.

Observation of Katò Havas' Teaching

During summers, Miss Havas offers her "Twelve Lesson Course," a series of lectures, usually presented during a six-day period. When a particular group completes this course, another group begins. Often some participants remain for the second session for better understanding of the content of the method.

At the session observed by the Project Director, Miss Havas' class consisted of approximately twenty people, who congregated in the main room of her summer cottage in a very informal and crowded setting. All but one were adults; the exception was a boy of high school age attending for the first time.

Miss Havas' presentation took the form of a two-hour lecture in the morning and another in the afternoon with break for refreshments. She discussed relaxation and freedom from anxiety in great detail. At all times, she emphasized leadership of the large muscles and the importance of the proper use of the upper arm and shoulder blades--principles stressed by Steinhausen. She emphasized extreme lightness and complete passivity of the hand and fingers in the bow hold.

She emphasized the importance of balance in violin playing, and stressed that all motion in the left hand should originate in the large knuckles (supreme motivation). She played with an extremely elevated left hand and a constantly moving (very high) thumb, a radical departure from her earlier playing known to the Project Director. (She explained that this was a result of her study with Mr. David Mendoza of New York.) During her student days Miss Havas had an extremely low thumb, an elbow far turned to the right, and a labored, slow vibrato. It appears that Waldbauer did not help her to alleviate these left hand problems. Waldbauer himself had some left hand difficulties: his vibrato was rather slow and labored. His attention was usually turned to bowing problems and to "left side tone support," which referred to the activation of the left arm against the pressure of bow on the string. It appears that Miss Havas' current and extremely high thumb position and her unequivocal endorsement of such for practically all of her students is an overcompensation for her earlier problems.

Some of the other points of her 1966 teaching included an outward position of the left elbow, which contradicted the rule stressed in her books of avoiding all contact with the base of the left first finger at the neck. These two principles are not compatible and she seemed to have departed from the no contact principle stressed earlier. Concerning finger movement, she emphasized the "forward propelling of fingers" and their very light contact with the string. She was opposed to teaching the vibrato or regarding it as anything more than an unconscious searching motion of the finger tip for its most comfortable placement on the string. The finger pressure was also to be pulsated during the bow changes.

After discussing these and other points, she invited each of her students to try them. Most of the students were amateurs: some were adult beginners. (Some professional students were heard in concerts during the session.) At no time during the five-day visit were any but the most elementary motion patterns discussed. The instruction dealt mostly with very slow strokes, usually played on the open strings, as the players searched for comfort and relaxation.

In conducting the classes, Miss Havas was always encouraging and spoke with utmost conviction. A most convincing person and teacher, she was able to create an atmosphere of trust between herself and her audience. She is a superb lecturer and psychologist, and her stage presence is impeccable. Her emphasis on good balance and relaxation (both physical and mental) were evidently helpful to many of her adult pupils. However, at the time of the visit, a lack of awareness of the role of body movements below the shoulder was evident. While Miss Havas emphasized the importance of arm balance, she did not deal with weight transfer or stiffness in the legs or waist. Her point of departure was always the shoulder. The stance of the pupils was often faulty or haphazard, and no effort was made to correct it. (It is believed that Miss Havas now encompasses these elements in her teaching.

She encouraged pupils to pay no attention to tone production, lest they build up anxiety in striving for a good tone. The same was true of intonation. This casual attitude toward the tone produced had its effect on what was heard. The intonation left much to be desired, and there was an obvious lack of good finger and bow articulation even among the best (professional) students, which the Project Director attributed to the extreme relaxation of fingers and hand. While this is in line with the principles of Steinhausen, when carried to the extreme, it is detrimental to precision and accuracy.

The Project Director concluded that what was seen and heard reaffirmed the principles pursued in the Project. The principles were not original but were effectively presented, although sometimes misunderstood by Miss Havas. Much of her success is due to her personality, enthusiasm, and ability to gain the confidence of her pupils.

Since the Project Director's visit in 1966, Miss Havas has continued to grow in knowledge and reputation as a teacher and lecturer. She realizes the extreme importance of relaxation in playing and is fully aware of the pitfalls caused by extreme concentration on, and attention to, details of movements. Her favorite comment, "Let it happen," is effective in releasing anxiety and fear and leads to greater enjoyment in playing.

Teaching in a Gypsy School

Following the visit to Miss Havas' school, the Project Director traveled to Budapest, where, through earlier contacts, a visit was arranged to the state-supported music school for Gypsy children. The purpose was to observe the highly intuitive school of string playing, one which has been handed down for many generations and which relies on rote teaching. This visit was described in the following article, which appeared in the American String Teacher, 17, No. 1 (Winter, 1967), 25-26.

VISIT TO A GYPSY SCHOOL
by Paul Rolland

The phenomenal success of Suzuki's teaching method suggests that rote teaching of string skills is here to stay. Learning by rote or, more properly, by imitation is not new. Many teachers have used it; several cultures have employed it.

The Gypsies, for example, have traditionally played by imitation, and their flair for stringed instrument playing, as well as their emotional, sanguinistic nature, assured them a prominent place in the field of light musical entertainment.

The thought occurred to me: How are the Gypsy children taught, how do they acquire their meticulously clean intonation, warmth of tone, not to mention their dazzling technique in tossing off some of the coffee house favorites?

This curiosity led me to make arrangements to visit some Gypsy teachers in Budapest during my recent visit. To my surprise I learned that recently a school has been established for the express purpose of teaching young Gypsy children in their traditional art of string instrument playing. A visit was arranged to this state supported school. This is the home of the Hungarian Youth Ensemble which tours Europe with much success.

As I entered an unimpressive old building in which the school is located, signs of busy renovating activities were in evidence.

My guide was Istvan Albert, a brilliant violinist himself and leader of the Hungarian Folk Ensemble which recently toured the United States. He told me that the school is presently being enlarged because the influx of so many new students warrants a substantial increase in the size of the school.

I was received by Laszlo Nemeth, assistant director of the school, who explained the purpose and the educational plan of the school. The school operates at the secondary level of instruction and provides the students not only musical training, but also, their public school education. According to Mr. Nemeth, the great majority of Gypsy children do poorly in the public schools of Hungary. They like to play their violins, but they have great difficulty in keeping up with the work required in the regular public schools. That special school brings musically talented Gypsy children together, provides them with academic training measured to their own level and aptitudes, and fosters their special talents. The academic training is under the direction of Zsolt Szabo who developed a curriculum which basically does not differ from the regular public school requirements, yet is adjusted so that the average Gypsy child can cope with the requirements. According to him, this new plan results in continued education of Gypsy children who, otherwise, would become dropouts of the regular schools. The school is set up as a boarding school for those whose home is in the country; children from Budapest live at home. There is no charge for tuition or room and board as the school is entirely supported by the state.

As I entered the building, unexpected sounds met my ears: the Bach, E Major Concerto on record. My guide took me in to one of the classrooms where a young Gypsy orchestra was rehearsing. This was the best group in the school, although not playing with its full complement of players at this time because of the recent tour of the Hungarian Youth Ensemble abroad and the fact that the school was just beginning to shape up after the summer recess.

The group was taught by the veteran Gypsy musician, Guyla Farkas. The instrumentation consisted of six violins, two violas, two celli, two double basses, two clarinets, and of course, the inevitable Zimbalom, the piano of Gypsy orchestras. As the orchestra went through their paces in performing some of the traditional Hungarian melodies, semiclassical selections, and improvised style music, I heard a performance that I will always remember for its sincerity, fire, rhythmic incisiveness, and tonal excellence. The playing was done without music, although I was told that every member of the orchestra knows how to read music and that they are also taught traditional theory and harmony. Their playing was by no means on an amateurish level, and from the point of view of good form and motion technique, it bore the mark of good professional training. I was told that the members of the orchestra receive instruction from some of the best teachers in Budapest. Among them is Ottó Szende who has recently published an impressive book on the physical and biological aspects of violin playing.

After hearing the performance of the group, I asked if they could play something that they had not yet learned well. They immediately obliged and proceeded to play the "Poet and Peasant" Overture. It sounded fine until they came to a point when the conductor stopped and said, "This is as far as we have learned it." I then asked, "Will you show me how you train the orchestra?" Again, Mr. Farkas obliged in teaching the piece for the first time to the group. He proceeded to dictate to the celli and bass players the notes they were to play using exact musical terms such as: "Play a G-C fifth, tremolo, like this"--showing and vocalizing the rhythm and the part of the bow where they were to play. "Let's hear it"--bang, the group came back with a brilliant tremolo. "That's right."

"Viola, second violins, you play these notes." Once again Mr. Farkas disclosed the name of the notes naming the interval and the rhythms for the children. They immediately responded with the right notes and rhythm. "Now, let's hear the basses, violas, and second violins together." The children immediately repeated the phrase as it was wanted. Similarly, he took each part, including the first violins, the clarinets, the Zimbalom, singing the notes, telling the rhythms, and so forth, and finally asked them to put together a four or eight bar section which the orchestra immediately replayed correctly and quite convincingly. While the young people were playing, the conductor kept counting, giving exact instructions of how long the notes should be held, where there would be a cut-off, and what the phrasing should be. His instructions disclosed the name of the notes, sometimes intervals, sometimes the name of the chord, and always vocalizing the rhythm and one melody. Within minutes, the group could play another sixteen measure section of the piece just as well as the part previously learned. In teaching the orchestra, conductor Farkas did not have a score in front of him, but in his head heard it in true Gypsy style.

I was informed that the young people learn to play from notes in other classes and can play from written orchestra parts as well, but during the orchestra session, they continue the training in the traditional style of the Gypsies by imitation and learning through the ear.

After leaving the classroom of the advanced orchestra, we went to visit a younger group whose ages averaged sixteen years. This group also played a similar repertoire. They played under three leaders of "Primas" as he is called. The Primas (pronounced Pree-maash) directs the orchestra while he plays in a standing position, giving signals and cues to the various instruments; his own playing always spirited, suggestive, full of live gestures, his tone strong. His feet are straddled, suggesting manliness, power, and vigor rather than elegance. The Zimbalom player was especially effective with his cutting rhythm and virtuosity as he underlined the mood of the piece and ornamented the melody, but was always following closely the Primas. The sincerity of the playing, the biting rhythms that make one feel like dancing, and the vitality of the tone of the group is something that I will never forget.

Unfortunately, because the school year was at the very beginning, I had no opportunity to observe the teaching of the younger set of Gypsy children. These children are taught by imitation in methods similar to the approach of Suzuki. Their materials are folk tunes rather than studies or exercises. Typically, they start to play one-string melodies, and after they can play the shortest tunes on one string, they expand their tunes. Learning is always through the ear with the strictest discipline in matters of intonation. A Gypsy teacher would not refrain from rapping the knuckles of a child who plays out of tune, a very old-fashioned teaching method indeed, but apparently an effective one. These youngsters aged five to twelve, can be seen now and then on the streets, especially in the smaller towns, playing in a rather primitive fashion with very poor equipment, but always in tune. Hundreds of children are started this way, some of whom will eventually get good instruction and end up in Gypsy orchestras to earn their livelihood.

The viola and second violin players in the Gypsy orchestra hold their instruments in a distinctly different style than the first violin players. The viola players hold the instrument in front of the chest, almost at a vertical slant so that when playing on the G and C strings, the elbow is in a low and comfortable position. The second violinist plays in a similar style although he does not slant the instrument as much. Since the second violin and the viola play almost exclusively on the lower strings, the players adapt a style for the sake of comfort and convenience. The instrument is held with the hand pressed against the chest, the hand often caved in at the wrist, similar to our square dance players. I asked the teacher if this position is encouraged and the answer was, "This is the way the second violinist and violas play in Gypsy orchestras. The position is comfortable for them and by keeping the ear out of the instrument, they can hear and follow the leader better.

The enjoyable visit gave me the impression that here are young people who are completely devoted to the task at hand; they enjoy what they are doing, and they do well what they set out to do. Whether they are leaders or followers, they did their work with zest and spirit. The education system that provides this type of schooling and experience to a special type of people deserves recognition. It provides the right type of program for children who have talent in one field and a weakness in others. All students seemed to enjoy the school and the program offered to them.

Footnotes

[1] Kató Havas, A New Approach to Violin Playing (London: Bosworth & Co., Ltd., 1961), and The Twelve Lesson Course in A New Approach to Violin Playing (London: Bosworth & Co., Ltd., 1964).

CHAPTER FOUR

REMEDIAL APPLICATION

Production of the Film "Remedial Teaching"

The teaching of remedial classes, which was originally scheduled as Phase V of the Project, took place during the summer session of 1966. The reasons for this change in the original phasing order were:

1. An unusually large enrollment in the Summer Youth Music program from which the student subjects were to be drawn.

2. A relatively light schedule of the Project Director and the University Film Service.

3. An attempt to ease the work load later in the Project.

Subjects for the remedial classes were selected from approximately one hundred violin students of the Junior Orchestra Camp of the Illinois Summer Youth program. The young people were auditioned and those having the most obvious problems with violin and bow position and left hand and bowing techniques were selected to take part in daily remedial classes. Since there were many students who met the qualifications, preference was given to those students showing signs of musical talent and a good ear. Seven students were selected for the class, which met for one-hour sessions twice a day. In addition to the remedial classes, the students took part in the ensemble program of the camp.

The class was taught by Donald Miller in the morning and by the Project Director in the afternoon. On the first morning, the students were taught to play a simple tune (Hot Cross Buns) with various rhythms and bowings. However, no attempt was made to improve their positions or technique. In the afternoon, the individual students were filmed. On the last day of instruction, the pupils were filmed again. The second film provided a means of comparison with the pre-instruction film.

Because of the time limitation, only the following topics were included in the instruction. (These topics are discussed in detail in Chapter Five.)

1. Correct violin stance and violin hold, with emphasis on balance and mobility in all parts of the body.

2. Proper relationship between the left hand and the instrument taught through an intensive use of left hand pizzicato, the "Shuttle" and the "Swinging" of the left arm. (The latter two exercises simulate shifting between the low and high positions, and string crossing techniques of the left hand.)

3. Good bow hold and correct placement of the bow on the strings.

4. Single bow strokes (down- or up-bows) with curved motion patterns known as the "Rebound" stroke.

5. Double and triple strokes while gradually increasing the length of the stroke. In these actions freedom of movement and transfer of body weight were encouraged.

6. Martelé-staccato accent, first using short strokes, then gradually increasing the length of the strokes and combining two or more strokes on the same bow.

7. Vertical finger action and correct placement of the fingers and thumb. Relaxation exercises for the left wrist and thumb.

8. Intonation studies using the open string and its octave.

9. Shifting exercises on one string using scales and octave shifts.

10. String crossing movements on two or more strings to develop freedom of movement and to relax the shoulder joint.

11. Détaché and sautillé bowing developed with quick repetitive actions in rhythmic groups.

12. Tone studies for sustained strokes on one and two strings.

13. Vibrato studies using rhythmic tapping and horizontal finger action.

The impression of the instructors and those witnessing the instruction was that the students who participated in these classes made substantial improvement in their technique. The "before and after" scenes of the film "Remedial Teaching" witness this improvement.

The University of Illinois Motion Picture Service developed this film during the summer and presented the scenes to the Project staff, whose consensus was that the scenes portrayed the actual development of the students. However, the staff did not believe that the film in its present state would help teachers, since it did not show the actual instruction which brought about the change in the students' playing. Therefore, additional scenes were filmed; these gave samples of the work which took place during the eight days of instruction. Since there were no local students involved, two Springfield students returned to the campus in October, 1966 for the filming of special scenes and close-ups. These scenes portray what took place between the "before and after" scenes of the original film. With these additional scenes, the remedial film was then edited and completed.

Remedial Work with Advanced High School Students

During the summer of 1968, staff member Don Miller applied Project principles in teaching five relatively advanced students from the Illinois Summer Youth Senior String Camp. After receiving one hour of instruction daily from June 24 through July 5, the students were videotaped in three sessions.

The instruction focused on the following topics:

1. Shifting.

2. Accented and smooth détaché bowings.

3. String crossing.

These aspects of technique were emphasized in the first movement of the Handel Sonata in A major (number one), in the second movement of the Handel Sonata in D major (number four), and in the cadenza and second movement of the Mendelssohn Concerto in E minor.

Problems in Teaching

Two of the students had difficulty shifting smoothly (because of excessive gripping with the left hand). Coordinating the left hand and bow in the accented détaché presented a problem for the same students. The others acquired these techniques readily. All of the students learned to cross strings smoothly, but only one achieved a passable springing arpeggio (Mendelssohn cadenza) during the short period of instruction.

Problems in Production of the Video Tape

Because of accoustical interferences and technical problems with the video tape machine, an inferior tape was produced (not submitted with this Report).

CHAPTER FIVE

DEVELOPMENT OF MATERIALS

Introduction

At the beginning of the 1966 school year, staff meetings were held in which detailed plans for the Project were discussed. In addition to lengthy evening meetings, Monday luncheon meetings were held with Richard Colwell, Endre Granat, Donald Miller, Kelvin Masson, and Paul Rolland. By the first scheduled meeting of consultants, November 20 to 22, 1966, the staff had a plan for the development of the films and other materials. Several tentative scripts for the films were presented to the consultants. (A list of consultants and a detailed report of this meeting are presented in Chapter Seven.)

The two-day conference with consultants resulted in some departure from the original design. It was agreed that the core of the Project should be the preparation of films which would present pedagogy directed toward the establishment of good motion techniques free from excessive tension. The sequence of planned film topics was presented and accepted by the group. Mr. Totenberg suggested early emphasis on string crossing techniques as a means of avoiding stiffness in the shoulder. Dr. Rabin emphasized the need for a Gestalt approach and the importance of introducing without delay most of the basic elements of technique. Mrs. Keller recommended the presentation of technical elements in the best musical contexts. Dr. Pernecky emphasized the importance of adaptability of the films to many teaching situations. Dr. Klotman believed that the all-important element in the Project was the films with everything else secondary and relatively unimportant.

The expectation was that the materials developed by the Project would pave the way toward important new approaches to string playing, rather than perpetuate present practices. For this reason, the consultants called for ideas and avenues which might be adapted to the needs of individuals in diverse locations and circumstances.

Some of the topics submitted at the first meeting with consultants were combined; others were expanded because of the complexity of the particular topic. Directives of the consultants were observed: the films were designed for teachers as well as for students. Since it was unlikely that additional funds would be available for films directed toward either teacher or student audiences, the language of the films was kept simple enough for the average fourth or fifth grader; yet it was not allowed to become childish. The films contained samples of professional performances but were mostly "staffed" by children and teachers. Color films were preferred by both students and teachers. Consequently, all films were produced in color.

Film scripts were given considerable scrutiny during staff meetings. The entire staff contributed to the ideas contained in the films and to the refinement of their content. This slowed the progress but promised a better product. Filming of "Establishing the Violin Hold," "Learning to Hold the Bow," "Playing at the Middle of the Bow," and "Establishing Left Hand and Finger Placement" took place from November through early January. The subjects in these films were private pupils of the Project Director or students from the Champaign Public School classes taught by Jerald Slavich, who was thoroughly familiar with the Project principles. He and other members of the staff assisted during filming sessions, giving helpful advice and criticism.

The development of the films suffered a delay because of the fire in the University of Illinois Motion Picture Production Center on January 17, 1967. The film center lost much equipment. Fortunately, the Project films suffered only slight smoke damage. The film center was relocated and re-equipped during the spring of 1967. However, at the time of the first meeting with cooperating teachers in September, 1967, only incomplete work prints of the first three films were available. As a result, the trial phase of the Project suffered because of constant delays in the film production.

It became evident that the role of the teachers manuals was very important. They were coordinated with the film scripts; their content was scrutinized and debated. Rough drafts were sent to consultants and advisors, some of whom returned them with valuable remarks. Those who did not respond were taken off the mailing list. Robert Klotman, Marvin Rabin, Roman Totenberg, Marjorie Keller, Jack Pernecky, Orville Dalley and Merle Isaac, in addition to the staff members, contributed to the revisions. The preliminary manuals were published and distributed among the cooperating teachers, whose comments concerning the feasibility, clarity, and shortcomings were solicited.

The consultants recommended that the films and musical materials should not constitute a specific method but should be designed for use in conjunction with method books of the teacher's choice. The content of Project products should stimulate capacity for growth, creativity, and continued development.

The consultants also recommended that young children serve as the subjects of the films with some attempt to show all ethnic groups. Class teaching should be emphasized to relate to typical public school situations. Narrative presentation should be given preference over lecture-type demonstration.

The work from 1966 through 1969 centered on the development of the film series and teachers manuals. The final list of films is presented below.

UNIVERSITY OF ILLINOIS RESEARCH PROJECT FILMS
The Teaching of Action in String Playing

In this series of seventeen 16 mm color films, artists, teachers, and students of various ages demonstrate principles and techniques of string playing with emphasis on the violin.

Young Violinists in Action - A Final Report (F-R)

Children of the Urbana-Champaign Project class perform a program of new compositions by Stanley Fletcher, Alan Shulman, Halsey Stevens, and Richard Wernick as a final report after two and a half years of study. Explanations are by the Project Director, Paul Rolland. The film illustrates the main principles of the Project and documents the achievement of Project students. It is recommended for teachers and pupils and is also effective for recruiting and parent demonstrations. Duration: 23 minutes.

Principles of Motion in String Playing (P-M)

The principles of free and efficient motion are discussed and demonstrated by Paul Rolland, grade school, high school, and college students. Similarities of motion patterns in string playing and in sports are analyzed and demonstrated. Duration: 21 minutes.

Rhythm Training (R-T)

Kindergarten and grade school students demonstrate how the fundamentals of rhythm can be taught without the instrument and how the same principles can be incorporated into string teaching. Duration: 10 minutes.

Establishing the Violin Hold (L-1)

Grade school children demonstrate the basic motions leading to a good violin hold. Left hand pizzicato, early shifting movements, and games are used to establish correct position, to give an immediate concept of left arm placement in the low, middle, and high positions of the fingerboard, and to avoid stiffness that results when the beginner is limited to the first position. Correct and incorrect forms are demonstrated. Duration: Part I--8 minutes; Part II--7 minutes.

Holding the Violin Bow (R-1) and Violin Playing at the Middle of the Bow (R-2)

Grade school children demonstrate actions used for the establishment of a correct bow hold. Short strokes at the middle of the bow, tone beginnings and releases, and string crossing motions are explained and demonstrated. Duration: R-1--8½ minutes; R-2--8½ minutes.

Principles of Left Hand Finger Action (P-L)

Principles of left hand placement and finger action are explained and demonstrated by artists and students. Concert and recording artists Robert Gerle, Leonard Sorkin, and Paul Rolland demonstrate the principles of left hand Balance, Angle, Elevation, and Thumb Placement in a variety of action shots. Suitable for both young and mature audiences. Duration: 12 minutes.

Establishing Left Hand and Finger Placement (L-2)

From the start, the student is made aware of the octave relationship of the open string and third finger (cello 0-4). The "Octave Game" and pieces based on the 0-3 finger pattern encourage good left hand position and intonation. Duration: 8 minutes.

Extending the Bow Stroke (R-4)

In Part I, grade school students demonstrate the playing of short strokes at the tip and at the frog. Bow transfers are practiced under supervision.

In Part II, grade school, high school, and college students demonstrate the playing of long bow strokes in groups and individually. Freedom of movement, flexibility, and total body action are emphasized, demonstrated, and explained. Part of the Vivaldi G Major Concerto is performed by a college group. Duration: Part I--8 minutes; Part II--11 minutes.

Developing Finger Movement (L-3) and Basic Shifting Movements (L-4)

The correct placement and action of fingers are demonstrated by grade school and junior high school students. Vertical and horizontal finger action and finger movement across the string are demonstrated and explained.

Grade school and junior high school students demonstrate basic shifting movements. The left hand is kept supple from the beginning by the use of shifting movements between the low, middle, and high positions. Simple and compound shifts are demonstrated and explained. Duration: L-3--10 minutes; L-4--10½ minutes.

Bouncing the Bow (R-3) and Martelé and Staccato (R-5)

Grade school and junior high school students demonstrate how spiccato playing is first introduced and how to avoid stiffness in playing bouncing bows.

Grade school and junior high school students demonstrate how to attack and release the string in martelé and staccato strokes. Duration: R-3--6½ minutes; R-5--7 minutes.

Developing Flexibility (R-6)

Grade school and junior high school students demonstrate exercises for the development of flexible bowing and "follow-through" motions between bow strokes and after releases. Duration: 10 minutes.

First Steps in Vibrato Teaching (L-5)

The vibrato movement is demonstrated and explained in Part I. In Part II, students of various age levels demonstrate techniques of vibrato instruction. The vibrato motion is analyzed and exercises are presented for its development. Duration: Part I--6 minutes; Part II--13 minutes.

Sustained and Détaché Bowing (R-7)

Part I demonstrates how slow bow strokes and a firm tone can be developed. The actual vibrations of the string in slow motion are shown in one scene. The development of bow pressure and correct bow distribution is demonstrated. In Part II, the all-important détaché bowing and its variants are explained and demonstrated. The performers are of all age levels. Duration: Part I--8 minutes; Part II--11 minutes.

Remedial Teaching (R)

A group of junior high school students from the University of Illinois Summer Youth Music Camp are shown before and after eight days of instruction. Principles of violin fundamentals and remedial instruction are demonstrated and explained. Particularly suitable for junior high school pupils. Duration: 20 minutes.

The Teaching of Kató Havas (H) (Not part of the series: "The Teaching of Action in String Playing.")

Miss Havas, of London, England demonstrates her principles of violin teaching with three adult students. Since Miss Havas' principles and goals are similar to those of the University of Illinois String Research Project, she was commissioned to present her ideas in a film to serve as information to the teachers of the Project. The Project presents this information to all string teachers, without, however, endorsing all aspects of her demonstration. Recommended for adults. Duration: 24 minutes. Black and white.

The Teachers Manuals

The teachers manuals which accompany the films are presented in the following section. The first manual, "Principles of Movement in String Playing," which is the core of the entire Project, is printed in its entirety. The other manuals are presented in a condensed form in which details of the pedagogy are omitted. However, an effort was made to show the effect of the trial teaching upon the original ideas and materials. Photographs contained in the manuals are presented in the wall charts submitted with this Report.

COVER DESIGN BY WILLIAM KORMOS

THE TEACHING OF ACTION IN STRING PLAYING

PRINCIPLES OF MOVEMENT IN STRING PLAYING

UNIVERSITY OF ILLINOIS STRING RESEARCH PROJECT

Paul Rolland, Director

1970

The research reported herein was performed pursuant to a contract with the United States Department of Health, Education, and Welfare, Office of Education, under the provisions of the Cooperative Research Program.

UNIVERSITY OF ILLINOIS
STRING RESEARCH PROJECT

School of Music
Urbana, Illinois

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Teachers Manuals and Final Report
Marla Mutschler, Research Associate

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F. A. Hellebrandt, M. D.

Consultant in Kinesiology
Marjorie Souder

Cover Design
William Korbus

Appearing in the Film

Violin: Paul Rolland, Carla Lehmann, Dan Foster,
children from the String Project classes
Cello: Allen Nisbet, Steven Sterba
Bass: Charles Yancey
Piano: Robert Ray
Dance: Edna Long

PRINCIPLES OF MOVEMENT IN STRING PLAYING

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[1] Since the introduction to this manual contains quotations and commentary included in Chapter Two of this Report, it is not repeated here.

TOTAL BODY ACTION

> It is insufficient to look at bowing as a mechanical-physiological problem of the bowing arm only. The needs of a highly perfected violin technique require that bio-mechanical functions of the entire body be included. The older concept of the *arm* performing the bowing is being replaced now by the concept of the *body* performing this function. It seems to us more useful not to think any more in terms of a "right" and "left" hand technique, but rather of an "entire body" technique.[1]

The importance of considering the whole body in the performance of musical or physical skills cannot be overemphasized. In contrast, conventional string teaching is usually limited to the isolated movements of the fingers, hands, and arms, without much concern for the attitude of the body as a whole. TOTAL BODY ACTION, including the fine, almost undetectable movements of the body which occur when the player is well-balanced and relaxed, often escapes attention.

Sustained immobility in any part of the body results in STATIC TENSIONS, which hamper natural movements and coordination and cause a feeling of discomfort. Such tensions frequently occur in the areas of which the player is not conscious--the ankles, knees, waist, shoulders, and neck. These tensions, if allowed to become set, tend to affect negatively the playing actions of the arms, hands, and fingers.

Perhaps the worst of these tensions is the "freeze" of the left arm and shoulder, traceable to the traditional practice of restricting the left arm of the beginner to the first position. The lack of left arm movement resulting from this approach is the primary cause of this problem, which delays the development of shifting and vibrato skills. In this Project, the immobility of the left arm is avoided from the start. The low, middle, and high positions of the fingerboard are explored through simple shifting exercises using left hand pizzicato and harmonics.

Similarly, the cure for excessive muscle tension in all parts of the body is the introduction of slight motions into the areas not directly involved in playing. Slight body movements, introduced by shifting weight, eliminate static tensions and allow the player to maintain natural body balance. When all parts of the body are free to move, the player (at any level) acquires smoother bowing and shifting skills, gains endurance, and experiences a feeling of ease and comfort.

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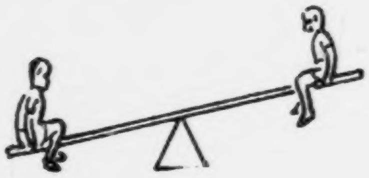
[1] Frederick F. Polnauer, "Biomechanics, A New Approach to Music Education," Journal of the Franklin Institute, 254, No. 4 (1952) 299. See also Frederick F. Polnauer and Morton Marks, Senso-Motor Study and its Application to Violin Playing (Urbana, Ill.: American String Teachers Association, 1964).

BALANCE IN STRING PLAYING[1]

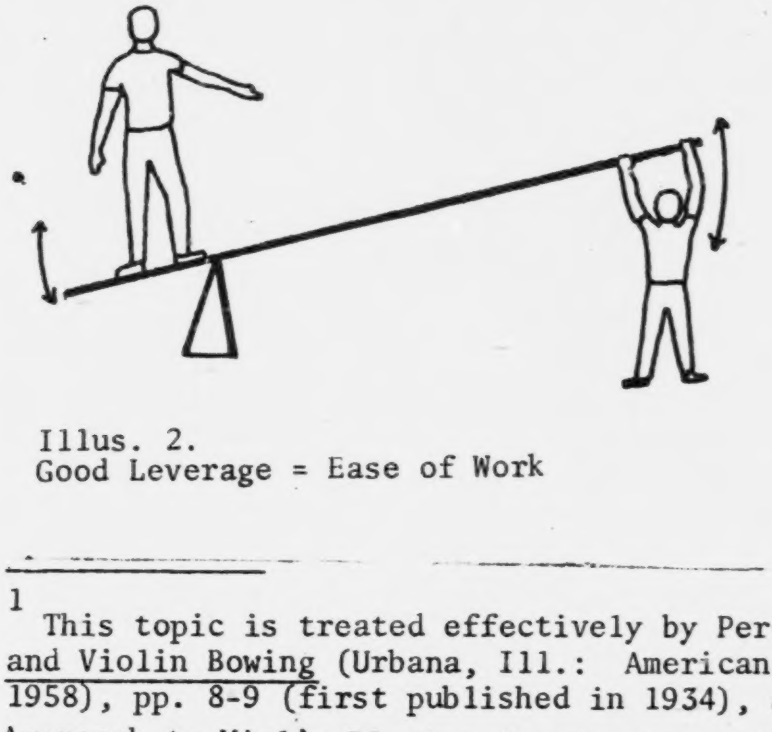
PRINCIPLES OF BALANCE AND LEVERAGE

Balanced objects can be moved with minimum effort. Even a small child can easily move heavy objects which are balanced. (Illus.1.)



Illus. 1.
Ease of Balanced Movement

In string playing, as well as in work and sports, the use of good leverage facilitates the action. It is fallacious to overemphasize the work of the fingers and hand. While they are important, they are never used independently but are coordinated with the larger motions of the entire arm and even the body. When the body and its various parts are brought into a balanced relationship, it will function more efficiently. The same is true when the body and its parts are brought into a balanced relationship with tools or instruments. Throwing a ball, swinging a golf club, or playing a string instrument can be done more skillfully and efficiently when there is internal balance within parts of the body and external balance between the body, its parts, and the instrument played or handled.



Good leverage helps to move objects with little effort. The greater the distance between the fulcrum and the application of power, the better the leverage and the easier the work. (Illus.2.)

Illus. 2.
Good Leverage = Ease of Work

---

[1] This topic is treated effectively by Percival Hodgson in Motion Study and Violin Bowing (Urbana, Ill.: American String Teachers Association, 1958), pp. 8-9 (first published in 1934), and by Kató Havas in A New Approach to Violin Playing (London:Bosworth&Co.,Ltd.,1961),pp.14-17, and in The Twelve Lesson Course in a New Approach to Violin Playing (London: Bosworth & Co., Ltd.,1964), pp.1-9.

ESTABLISHING BODY BALANCE

> The mechanical maladjustment, resulting from foot imbalance or reaction to pressure, is felt in the body above.[1]

Static tensions are less likely to occur within a well-balanced body. When the body's natural balance is disturbed, tensions will appear.

Good body balance is based on a correct stance. According to the physiologist Hellebrandt, "when the feet are together, the stance is unsettled. Turning the toes out to an angle of 45° or separating the feet. . .steadies the stance."[2] The Project advocates this recommended "V" position of the feet and slight space between the heels (varying from about two to ten inches according to the height and agility of the player).

Hellebrandt has observed that standing is actually movement on a stationary base and that "postural sway is inseparable from the upright stance of man."[3] In the Project, this natural sway is encouraged to promote relaxation. In standing position, the body weight rests on both feet but not in a static manner. During playing, the student is encouraged to allow the weight to shift from one foot to the other, which relieves tension and aids bowing movements. If the student is relaxed and well-balanced, the weight transfer will occur instinctively. Its absence is a sign of stiffness, which can be alleviated by slight flexion in the knees and through the "Action Studies" described in "Extending the Bow Stroke." The larger share of the weight rests on the left foot much of the time in order to give greater mobility to the right arm. However, the weight is approximately the same on both feet when playing at the frog with the two arms close to the body.

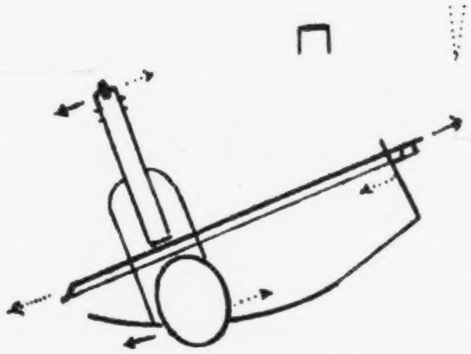
---

[1] Josephine Rathbone, Corrective Physical Education (Philadelphia: W. B. Saunders Co., 1949), p. 9.

[2] Frances A. Hellebrandt and Elizabeth Brogden Franseen, "Physiological Study of the Vertical Stance of Man," Physiological Review, 23 (1943), 225-26.

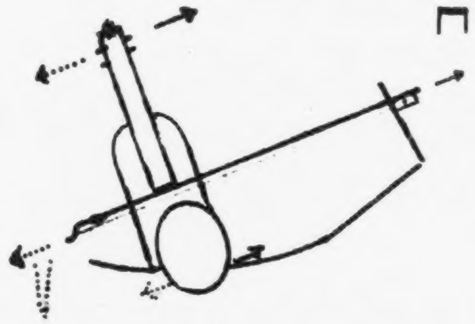
[3] Ibid., p. 227.

The shifting of weight complements large movements of the bow arm and is usually bilateral (in the opposite direction to the bow stroke), thus benefiting long strokes of fast or medium speed. Apparently, Polnauer was the first to recommend bilateral bowing and advocated its use exclusively.[1]



Illus.3. Bilateral Bowing

However, in long, slow bow strokes it is advantageous to use unilateral movements (body and bow moving in the same direction), but even in these, the shifting of body weight slightly anticipates the new stroke an instant before the bow change.



Illus.4.Unilateral Bowing

In both bilateral and unilateral movements the player should anticipate the change of direction by leaning very slightly (with the head and left shoulder from a flexible waist) to the left or right in starting the new stroke.

In the sitting position, the body weight is supported by the feet as well as the chair. However, weight shifting still occurs in a similar fashion between the left and right feet and ischia (lowest parts of the hip bones). In the sitting position, greater flexibility in the waist substitutes for the more passive role of the legs.

In double bass playing, even greater body mobility is required, because of the extensive movements of the left arm, and because of the necessity of partially counterbalancing the weight of the instrument.

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[1] Polnauer, "Biomechanics," pp.297-316

BALANCE IN THE VIOLIN HOLD

Balanced support, not a vise-like grip, is the most efficient way to hold the violin and viola. A static grip of the instrument should be avoided. The head should be allowed to move slightly during playing. Much of the instrument's weight is supported at the chin rest, the left arm providing some support under the neck of the instrument, thus alleviating considerable tension in the shoulder area. The development of good instrument support is explained in the research Project film and manual "Establishing the Violin Hold."

BALANCE IN THE BOW ARM

Ideally, the instrument, arm, and bow are in a balanced relationship. The weight of the bow rests on the string and on the right thumb. The weight of the arm is released through the bow in varying degrees into the string, which supports the weight of the bow and the released weight of the arm. The arm is not held stiffly but is allowed to gravitate or rise at all times. This change of level, substantial in string crossings, should also be present to a lesser degree when the bow remains on one string. The sensitively balanced and constantly moving upper arm helps to keep the shoulder joint flexible. The right arm and bow may be visualized as a teeter-totter whose fulcrum is the string and whose opposite ends are the elbow and the bow tip.

BALANCE IN BOW PRESSURE

To produce a beautiful string tone at all dynamic levels and with varied tone colors, the player must be aware of the interrelationships of bow pressure, bow speed, and contact point. Near the bridge the string offers the greatest resistance to the bow; near the fingerboard the string is the weakest. Consequently, greater friction (bow pressure) or slower bow speed are needed near the bridge; less friction or faster bow movements are required farther from the bridge.

At the string contact the actual pressure measurements are rather small: the self-weight of the violin bow is only about two ounces,[1] and this weight is sufficient to produce an average *mf* volume when used in the vicinity of the balance point. However, at the tip the self-weight of the bow dwindles to less than an ounce. To make up the loss of about one ounce of pressure the player must apply approximately two pounds of weight at the tip.[1]

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[1] Viola bow, approximately 2 1/3 oz.; cello bow, approx. 3 oz.; bass bow, approx. 4 oz.

At the frog the released self-weight of the bow is as much as a half pound and must usually be reduced. In view of the above data, it is evident that the player must reduce or increase the self-weight of the bow during the stroke at all times, even within the same dynamic level (more substantially in dynamic changes). To do this with ease, he should use efficient leverages.

The typical suggestion to press the first finger down for a bigger sound is ill-advised, as it tends to localize the pressure in the hand and short-circuit the forces of tone production. A much better way to produce needed bow pressure is to release part of the natural weight of the arm into the string through the bow while letting the thumb and fingers merely *resist* the collapse of the bow hold. The thumb, of course, must support the bow upward, and since the thumb is part of the bow arm, the right arm must simultaneously offer upward support to the bow while releasing arm weight downward into the strong. *Such action is possible only through rotary movement.*

The principle of using rotary movement for tone production was first advocated in 1902 by F. A. Steinhausen.[2] He denounced the wrist movement as used by the Joachim School as an inferior movement which should be replaced by the rotary movements of the forearm. He called for the inward and outward rotation of the forearm (pronation and supination) to increase and decrease bow pressure. Thus, bow pressure is decreased with a clockwise rotary arm movement (supination) and not merely by pressing the weak little finger on the bow.

However, Steinhausen did not recognize the advantage of using the rotary movement of the *upper* arm for tone production, a more powerful and more reliable movement. The slight inward and outward rotations of the upper arm effectively support the pronation-supination movements of the forearm, resulting in better leverage and greater freedom of the arm.

To summarize: in producing needed bow pressure, the fingers are not the chief source but are merely conveyors of the pressure which comes from the controlled release of arm weight into the string. However, finger pressure is used for nuances, accents, and general refinements of tone.

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[1] For additional information, see "Bow Pressure" by Paul Rolland, The Instrumentalist, 18, No. 2 (1963), 80-82.

[2] F. A. Steinhausen, Die Physiologie der Bogenführung, 5th ed. (Leipzig: Breitkopf und Härtel, 1928).

BALANCE IN REPETITIOUS MOVEMENTS

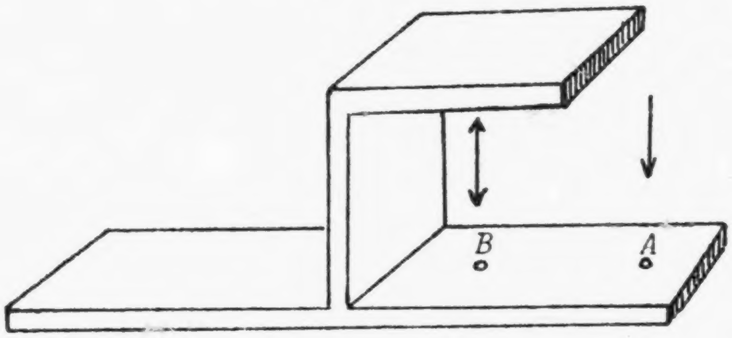
> Cycles have no definite beginning except the first, and have no definite end-point except the last one.[1]

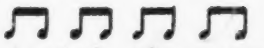
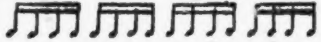
Repetitious movements are frequent and important in string playing. Détaché, spiccato, sautillé, and tremolo bowings are repetitious actions, as are the vibrato and the trill. Since these movements often occur in long passages of music, they can become tiring, causing stiffness and breakdowns when poorly done.

These problems are often caused by overstimulated action. The mental image of fast notes tends to cause anxiety and stiffness; simultaneous action impulses are sent to the opposing muscles, causing tension or even complete binding of movement.

The realization that a group of two notes may be played with only one action impulse has a surprisingly good effect on the technique. Motion experiments with tapping can dramatize this principle.

Illus. 5.
The Click Board



Tap with a stick or pencil at A, producing the rhythm:  At point B the rhythm  can be produced with the *same* effort. However, when the player begins the experiment by tapping the sixteenth notes at B, he tends to use much more effort. The same is true in various types of repetitious bowings. Détaché, spiccato, sautillé, and tremolo can be produced by letting the arm and hand coast back without a superfluous action impulse on the return bow. When done in this manner, the movement is less tiring, and if done with a balanced arm movement the tones produced will sound even.

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[1] Ottó Szende and Mihály Nemessuri, The Physiology of Violin Playing (Wellingborough, England: Collet's Holdings, 1971), p. 16.

Balanced arm movements resemble the action of a teeter-totter whose imaginery fulcrum is between the elbow and wrist. When slight upper arm rotary movements are combined with the flexion-extension of the forearm or hand, balanced movement ensues: the elbow and hand move in opposite directions, making the action more relaxed. With the bow placed on the string at the middle, the player can visualize a longer teeter-totter whose opposite ends are the elbow and the tip of the bow and whose fulcrum is the string.

The use of balanced arm movements in vibrato greatly aids relaxation and increases stamina. The back and forth movements of the hand and forearm may be balanced by very small, almost invisible, rotary movements of the upper arm. Consequently, the elbow moves very slightly in and out.

The rotary movements of the upper arm are easily observed when a light stick is fastened at a right angle to the upper arm just above the elbow. The experiment dramatizes the presence of these movements in balanced bowing and vibrato.

TYPES OF BOWING MOVEMENTS

FREE "BALLISTIC" MOVEMENTS

Some bowing movements are fast and "free wheeling"; others are slower and controlled throughout the duration of the stroke. Movements of the first type are initiated with a thrust, after which the arm passively coasts until arrested. These light and fast motions resemble "ballistic movements." (They are similar to the flight of a bullet or a dart, although arm movements cannot attain the lightness and speed of unattached objects.) Movements of martelé, spiccato, and fast détaché bowings have a kinship to such ballistic movements. In these, the initial impulse is followed by a passive, relaxed arm movement. In good performance of these strokes, the controlling muscles (antagonists) come into play toward the end of the movement; therefore, they are in a position to reverse the movement. The arm, hand, fingers, and bow all move in the same direction (as in throwing a dart). The lifting muscles of the arm should be as relaxed as possible, and the bow hold and hand should have a passive feel, allowing the weight of the arm to release the desired amount of pressure into the string through the bow. During the downstroke the fingers extend slightly; during up-bows they bend.

SLOW, CONTROLLED MOVEMENTS

> In the slow-controlled forms of movement the antagonistic muscle groups are continuously contracted against each other, giving rise to tension.[1]

In contrast to the "free wheeling" fast strokes, good slow movements require control throughout the stroke. In these, the opposing muscles are not relaxed to such an extent as in fast strokes. The light tension of the controlling muscles lends stability and fullness to sustained slow strokes. When this control is missing, the tone becomes weak and wavering and bow changes and string crossings tend to become jagged and obtrusive.

Correct bow distribution is essential. When the tone is of even volume, the division of the bow should be even. If crescendo, decrescendo, or swells are required, the bow must change speed in proportion to the change of volume. Lucien Capet's work is noteworthy in this respect.[2]

The player should hold the bow more firmly in sustained strokes than in faster strokes. In slow strokes the tone tends to become indistinct without a sufficiently firm (yet flexible) bow hold. In slow strokes the string will tolerate less pressure, and the slightest tremors of the hand, even slight movements caused by breathing, may disturb the sound. Since in slow strokes the bow arm cannot lean, "sink into the string," as in fast strokes,the player should think of pulling against an imaginary resistance that slows the movement of the bow. This is Capet's "horizontal pressure," a concept that greatly aids tone control and steadies the bow arm. Pulling the bow against horizontal resistance, drawing the bow slowly above the string, and practicing portato strokes and evenly measured bow divisions are exercises that help to develop this technique.

As the bow moves faster, the player can increase friction between hair and string, "sink into the string," even at points farther from the bridge, since bow speed deletes friction. This principle is demonstrated with automobiles: the greater the speed, the less the friction between tires and road. (If the speed is too great for the traction, the car will go out of control.) A heavier car or a loaded trunk will increase traction and stability.

The ability to play beautiful sustained strokes (son filè), either at an even volume or with shadings, is a highly coveted art in the history of string playing. Tartini, Geminiani, and Leopold Mozart describe this technique, and Viotti allegedly practiced sustaining a single bow stroke for fifteen minutes! Even the "one minute bow stroke" is an exercise which certainly tests the player's endurance and ability to draw the bow flawlessly. Diligent practice of sustained strokes--if correctly done--will improve tone quality, often to a surprising degree.

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[1] L. E. Morehouse and J. M. Cooper, Kinesiology (St. Louis: C. V. Mosby Co., 1950), pp. 194-95.

[2] Lucien Capet, La Technique Superieure de l'Archet pour Violin (Paris: Editions Salabert, 1946), pp. 12-22.

BEGINNING AND ENDING MOVEMENTS

> To perform a sport skill, there are usually three general phases through which the performer must move sequentially. These are classified as (1) the preparation phase, (2) the movement phase, and (3) the follow-through and/or recovery phase.[1]

IN BOWING

> The preparation phase is important because the quality of movement leading into the preparation portion of the skill will have either a beneficial or detrimental effect upon subsequent movement.[2]

Movements--whether in the bow arm or in the left arm--should not begin abruptly. Instead, the player should overcome inertia by anticipating the movement. Lack of anticipation results in hasty and jerky tone beginnings. The character of the preparatory movement depends on the nature and speed of the stroke: it should be calm in gentle music and brisk for vigorous entrances.

Follow-through movements, well-known in sports, should also be used in string playing. Abrupt or unnecessary stops should be avoided when completing strokes.

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[1] Gene A. Logan and Wayne C. McKinney, Kinesiology (Dubuque, Iowa: William C. Brown Co., 1970), p. 1968.

[2] Ibid., p. 169.

> A follow-through should be smooth and continuous in order to dissipate the amount of force accumulated during the summation of internal forces.... If the follow-through tends to be "jerky" or stops too soon, this may be a result of inadvertently slowing the summation of internal forces prior to the crucial phase of the sport skill.[1]

In string playing, the movement should survive the sound! One should avoid stopping the arm movement during short rests and phrasing. Each movement is the forerunner of the next and should be fused smoothly into the following one, not interrupted by dead stops. "Stop and go" driving requires more fuel, and the same is true in string playing.

In ideally smooth bow releases, bow changes, and string crossings, there is an absence of sudden and convulsive movements in the arm. Smooth follow-up movements at the end of strokes spend the kinetic energy of the arm and bow as the movement ends. In the absence of follow-through movements, the antagonist muscles bring the motion to a halt too abruptly.

IN SHIFTING

Anticipation of movement is especially important in shifting. Since it takes time to move from one position to another even in the shortest and fastest shifts, the movement must begin slightly ahead of time in order to arrive in the new position on schedule. For smooth and efficient shifts, the left arm should lean in the direction of shift before the finger is released from the old position. This action is similar to walking, in which each step is begun by leaning in the direction of movement before the foot is lifted off the ground. The faster the movement, the more one leans in the direction of progress. In shifting, the slight preparatory leaning movement eliminates the inertia of the arm. In the preparatory movement, the elbow leans slightly to the right in ascending shifts and to the left in descending shifts. Without this preparation, the shift is usually jerky and abrupt. The sudden starting and stopping of the arm not only ruins legato passages but is also tiring.

The left arm should not be held rigidly but should be capable of swinging in and out at all times. The *slight* in or out swinging of the elbow helps to prepare upward or downward shifts and unify the fingers, hand, and arm during the shift. In all but the shortest shifts, the hand and finger movements should be supported by at least some arm movement. The longer the shift, the greater the need for arm and for some body movement (especially in cello and double bass playing). In long shifts, the preparatory movement (wind-up) may occur in the opposite direction, as in throwing a ball.

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[1] Ibid., p. 175.

CHANGING THE DIRECTION OF MOVEMENTS

> Less power is necessary to change the direction of a moving object if the object is kept moving than if the object is brought to a stop before it is moved in the new direction. The turn in swimming is a short circle, not an abrupt reversal of the direction of the movement.... Hesitation, or the temporary and often minute cessation from motion, should be eliminated from the performance.[1]

SEQUENTIAL MOVEMENTS

> Summation of internal forces is a direct result of a rapid, timed sequence of aggregate muscle actions moving body parts in such a way that each force is added to the preceding force to provide the desired amount of force at the specific point of application.[2]

Jerky and angular bowing can be corrected by curving and sequencing movements. According to the principles stated by Steinhausen,[3] the large members of the body lead and the small ones follow (in contrast to fast, balanced movements where the movement can be started in the small parts). Thus, in bow changes or string crossings the change first occurs in the slight transfer of body weight (with the exception of fast or short strokes). Then the chain of motion passes through the upper arm, forearm, hand, fingers, and bow. All this takes place in a very brief time sequence, barely noticeable to the naked eye but quite obvious in slow motion pictures. In *ideally* sequenced motions, the upper arm changes its direction by a very slight rotary motion (like a ball bearing) while the forearm completes the previous stroke; the hand, fingers, and bow complete the stroke after the forearm has changed direction. In this fast chain of events, the follow-through movements of the hand, fingers, and bow continue the motion for a split second while the upper arm and forearm turn in the new direction.

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[1] L. E. Morehouse and A. T. Miller, Physiology of Exercise (3rd ed.; St. Louis: C. V. Mosby Co., 1959), pp. 79-80.

[2] Logan and McKinney, pp. 170-71.

[3] Steinhausen, pp. 117-25.

BOW CHANGES

The technique of changing the bow varies with the speed: in fast bowings (detache, spiccato, rapid string crossings, etc.), the movements are of the pendulum type. With the slight interplay of the forearm and rotary upper arm movement, continuous swinging can be induced. As previously explained in the clickboard experiment, this is far more efficient than adding up a series of single isolated movements.

The balanced swinging of the two main limbs results in slightly looped movements in either clockwise or counterclockwise direction.[1] The wrist and fingers may passively contribute to the movements, but the player should not preoccupy himself with these secondary motions. The use of follow-through movements and sequential actions in slower bow strokes brings about continuity of action and tone during bow changes.

A sequential motion pattern can be compared to the movement of a turning train, in which the engine turns first and the rest of the train follows. Thus, in bow changes of slow or medium strokes the powerful members lead (slight shifting of body weight, movements of the upper arm and forearm), and the hand and bow follow.

It is impossible to pinpoint the speed where balanced repetitious movements turn into sequential actions. Sequenced movements can be used in fairly swift détaché strokes, but these can also be played with balanced repetitious movements. The choice is up to the player. Sequenced actions are conducive to legato and intense sounds, while direct motions akin to "ballistic actions" are more appropriate in light, accented, and swiftly-moving strokes. Even fast strokes contain some sequencing, but the time lapse between the initiation and occurrence of movements is so slight that it escapes the player's volition or control. The criteria for an acoustically and kinesthetically good bow change are smooth continuity of sound and movement and accurate articulation.

The player should change the bow without haste. The arm can turn a fraction ahead of the bow (hand and fingers concluding the stroke), and with the use of rotary movement it can weave around the turning point if the fingers and wrist yield. The *slight* looping of the arm (in either clockwise or counterclockwise direction) permits the use of free, spacious movements unrestricted to a single plane. The looping causes the hair to turn very slightly on the string. The bow never needs to come to a *complete* stop, since the *very slight* turning of the stick during the bow change (toward the fingerboard at the tip and in the direction of the bridge at the frog) can assure the continuity of motion and sound while the bow momentarily ceases to progress in its up and down direction.

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[1] For a detailed study of curved and looped bowing patterns, see Hodgson, pp. 26-74.

Only through the use of the ear can the player produce the desired tone quality during bow changes. At times the music may require completely inaudible bow changes. At other times the bow changes should be emphasized by gentle articulations or even strong accents. The infinite variety of such shadings must be governed by the ear, which can be helped, but not replaced, by motion skills.

STRING CROSSINGS

> Work is accomplished at a faster rate if component movements are in a continuous curved motion than if movements involve abrupt changes of direction.[1]

> Continuous curved motions require less effort than straight-line motions involving sudden and sharp changes in direction.[2]

The same principles of movement are valid in string crossings as in changing the bow. There should be a continuity of movement--abrupt changes of direction should be avoided. When crossing from one string to another in either single or slurred strokes, the motion should not be stopped but merely deflected (bent). The principle of "round string crossing" is well-known in string teaching, as it was one of the important facets in the teaching of the fabulous virtuoso and master teacher Eugene Ysaye. He suggested that all string crossings should follow the curvature of the bridge.

String crossing movements in slow strokes should also be sequenced with the upper arm leading, hand and bow following. The deflection of the movement should anticipate the beginning of tone on the next string, not much, to be sure, but just enough to avoid a jerky, angular movement in dropping or raising the bow and arm. This anticipation is particularly important near the tip of the bow where the string crossing requires a much larger arc than near the frog.

When the string crossing movements coincide with bow changes, the same principles apply as in bow changes on one string. The difference lies in the increased size of the loop during string crossing and in the predetermined direction of the loop. (In string crossings, the loop must be either clockwise or counterclockwise, while in the bow changes on the same string the loop can be made in either direction.)

When string crossings occur in fast strokes, the movement may be initiated in either the arm or the hand. When such strokes are continuous, they are best performed with balanced arm movements, which are basically the same as in all fast repetitious actions described above. However, the movement is deflected in a more vertical direction when crossing strings. When the fast crossing is between adjacent strings, the loops should be very narrow, with the arm movement reduced to a minimum by a degree of wrist and finger participation.

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[1] Morehouse and Miller, p.67.

[2] Ibid., p.80.

Since string crossing movements require continuous use of the horizontal, vertical, and rotary movements of the arm, they are extremely beneficial in the development of smooth, relaxed, and well-coordinated bowing. The importance of a good string crossing technique cannot be overemphasized.

NARRATION OF THE FILM

Beautiful string playing is the result of orderly movement of strings. and players. String instruments and string players come in all sizes, and good playing movements can be learned at any age. In this film series, principles of movement in string playing will be explained and demonstrated.

Balance is the first essential of good movements . . . whether playing on a teeter-totter, riding a bicycle, or playing a stringed instrument. The body must be lightly balanced so that every one of its parts is free to move at all times. Keep the joints and limbs flexible and balanced as if floating in the air. Immobility in any part of the body breeds excessive and unnecessary tension.

The instrument is supported by a balanced hold. The neck must not be stiff while holding the violin or viola. It is the weight of the head that balances most of the instrument's weight. The left arm helps a little.

The weight of the bow arm is partially balanced by the instrument and the left arm. Avoid tension caused by gripping or supporting the bow excessively. Let the bow rest on the strings and the relaxed arm cling to the bow.

Good leverage and balance help to do things with little effort. With good leverage, balance, and free movement it is easy to produce a big tone. Use the leverage and weight of the arm to provide needed bow pressure on the string. Do not press the bow with the fingers alone, but let the weight come through resiliant and flexible fingers.

Repetitious movements are often used in string playing. The détaché, sautillé, tremolo bowings, and vibrato are repetitious movements. Their techniques depend on a well-balanced arm. In these fast, balanced movements the hand and arm move in opposite directions. The small and passive rotary movements of the upper arm are the key to good arm balance. Do not immobilize the upper arm in fast playing. Effortless playing results from good arm balance, because the arm returns to its starting position without additional effort.

In string playing, two notes may result from one impetus. This is not true in piano playing. Don't impel every movement in fast playing; this wastes effort and results in stiffness and sluggish playing . . . . This is better.

Also balance the arm in vibrato. Observe the light, balancing rotary movements in the upper arm.

Notice how naturally the left arm balances the extended movements of the right arm. In the same way, the movements of the bow arm in long strokes are balanced by slightly shifting the weight of the body in the opposite direction. These movements come about quite naturally if the player is relaxed and sensitively balanced.

Don't freeze before starting to play. Anticipate the bow stroke in advance. The preparatory movement should have the same character as the music which follows . . . for gentle music keep it calm . . . for energetic music do it vigorously.

The baseball player follows the same principle.

Avoid sudden starts. Ease into a motion . . . don't be hasty. Anticipate movements to overcome the inertia of the body at rest. The same is true in the shifting movements of the left hand. The well-timed movement slightly anticipates the sound.

Just as there is a correct way to begin playing, there is also a correct way to end. When finishing a movement, follow through . . . do not stop abruptly. Each movement is the forerunner of the next and is smoothly fused into the preceeding one. Don't interrupt bowing motions unnecessarily . . . follow through smoothly during rests.

There are many types of bowing movements. Some are quick and direct. In these, all parts of the arm and hand move in the same direction. After the initial impulse the arm coasts without effort. In these *ballistic actions* the arm, hand, fingers, and bow all move in the same direction in an effortless, quick action.

Slow movements require greater control and intensity whether drawing, painting, or bowing. The instrument (pencil, bow, etc.) must be held more firmly in slow strokes. A loose bow hold will cause an indistinct quality and a lack of control.

Movement involving change of direction requires well-timed sequential actions. In the chainlike movements of sequential actions, one part of the body turns in the new direction while the rest of the body completes the previous movement. Watch the arm lead and see the hand and bow follow . . . . Think of the elbow and the tip of the bow as opposite ends of a teeter-totter. Avoid sudden jerky changes of direction which cause loss of balance.

The same is true in string crossings or in bow changes. Glide smoothly from string to string with unhurried, round motions.

Use a lightly-balanced arm to play fast movements with ease. Observe the elbows. They seem to float; they are bouyant. Proportion the bow according to the length of the note. Use less bow in faster playing but still maintain balance in the body and bow arm.

Finally, the string player must be comfortable. Don't fidget before playing . . . . Be ready to play instantly.

These players, who have studied for about two years, have learned to avoid excessive tensions. Their smooth motion patterns and relaxed, flexible approach give them a feeling of comfort and well-being. Their technique is reliable and their playing is free, spirited, and expressive . . . . The other films in this series will show in detail how their playing was developed.

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Summaries of Films and Teachers Manuals

In order to describe, in a systematic way, the effect of the trial of the materials, each topic of the instruction will be discussed. These topics are identified by the film and manual titles.

Rhythm Training

Rhythm making is seemingly the first logical activity for the beginning instrumentalist. Instrumental motion skills are related to rhythmic actions, and the beginner can learn motion controls by using his own body and simple tools.

Rhythmic activities were a large part of the early instruction. The children were taught to be aware of the pulse of the music and of the rhythm of the melody. They acted on the pulse by stepping, clapping, tonguing, and waving.

The first activities with the instrument were also based on rhythmic motions. These activities included plucking and tapping rhythms with the left hand, and playing them with the bow on open strings.

Rhythmic actions proved to be an excellent test of instrumental aptitude. The progress of the children indicates that those having the best coordination in the first rhythmic activites were most successful. Some children with average or less than average rhythmic skills but with a good sense of pitch have done reasonably well, but those who were conspicuously poor and awkward in relating music to movement did poorly, and eventually dropped out of the program.

Stepping out the rhythm of melodies was a difficult task for most of the students, and confusing to many. When the steps are used sometimes as the pulse, other times as the melody, the children usually become confused. "Stepping" on the rhythms of melodies was therefore deleted in the revised teachers manual. Footsteps or foot-tapping was used only to maintain the beat.

Rhythmic activities dispelled tedium in the classroom; the children were refreshed and relieved of their confined playing positions as they moved to music.

Some teachers, however, showed a lack of interest in this phase of work. Some regarded anything but playing activities as a waste of time. The children who from the beginning were guided to associate music with movement played with freer motions, bigger tones, and more spirit. They seemingly became better ensemble players.

Rhythmic note reading, as the first non-rote activity, was done first without the instrument (clapping, tonguing, etc.), then with pizzicato, and finally with the bow on open strings.

The students enjoyed antiphonal games and polyrhythms between two players or groups of players. At the end of the second year of study, the Urbana-Champaign class played rhythmical contemporary pieces such as "A Musical Game of Tag" and "Peter's March" by Richard Wernick, "Theme and Variations for Two Violins" by Alan Shulman, and "Four Duets for Violin and Cello" by Halsey Stevens. Each requires sophisticated counting and note reading skills and constant presence of mind.

Establishing the Violin Hold

The following ideas were tried in this phase of instruction:

1. Extensive use of left hand pizzicato with the fourth finger
2. Posture and strengthening exercises
3. Early use of middle and high positions

1. Left Hand Pizzicato. This has long been regarded as one of the "frill" effects of violin playing. The virtuoso works of Paganini often call for it. The violin pedagogue, Demetrius Dounis (1886-1954), used it extensively as a finger-strengthening device.[1] However, Samuel Applebaum, noted teacher and author of string methods, frequently uses left hand pizzicato in his student pieces and transcriptions. Obviously, he is aware of the technical benefits derived from its use.

In the current research, left hand pizzicato (mainly with the fourth finger) was introduced for the purpose of aligning the left hand and strengthening the fourth finger, which is usually neglected during the early stages of study. Plucking with the little finger requires supination of the forearm--one of the major requirements of good left hand pizzicato from the start. The fourth finger was placed near the halfway point on the string. A signal dot marker (small colored dot with adhesive backing) was used to locate this spot. Beginning with the first lesson, the students were asked to pluck the open strings (for the purpose of tuning). While the students plucked (later, bowed) their open strings with violins in playing position, the teacher tuned. This enabled them to hear the pitch as the teacher altered it and made appropriate comments ("too high" or "too low"). While this took considerable class time at first, it was not a waste of time, since the students also strengthened their fingers and positioned the left hand as they tuned. Later, left hand pizzicato was also practiced in the high and first positions. This simple device developed beautiful hand positions and activated the fourth finger. The video film report of the fourth week gave evidence of the excellent results achieved by this device. The fourth finger of almost all students had become strong and flexible by the time the "Fourth Week Report" was photographed (after 16 lessons). Because of the frequent use of the upper positions, the correct relationship of the instrument and body was established. The common and destructive fault of resting the instrument low in front of the chest generally disappeared. As a result of the "releasing" pizzicato movement, the forearm was turned sufficiently inward, yet not forced into a locked position.

In addition to tuning, left hand pizzicato was used for the following activities:

a) playing rhythms on all strings by rote (name and word rhythms, improvised rhythms)
b) accompanying melodies with open strings
c) introducing the reading of rhythmic notation

Problems. While the local classes and a few of the state-wide trial classes did well with the technique, a number of the classes were poor. Several of the teachers continued to take the violin away from the students for tuning to "save time." Some students lacked the suggested equipment of good metal strings with tuners. Since the children in these classes took no active part in the tuning process, they did not learn to tune their instruments.

A number of the teachers were reluctant to teach left hand pizzicato in the high positions during the early stages. In these centers, the desired violin placement did not materialize.

A technical problem occurred when left hand pizzicato was taught in "rest position." In this position the student naturally turns his hand toward his face--a completely unrealistic hand and finger position. Since great effort was required to correct this fault, all playing activities in "rest position" were deleted in the state-wide retrial of first year materials. "Rest position" was used only as a reference point during actions designed to establish the violin hold.

A minor problem arose from the extensive use of left hand pizzicato: the students plucked the strings too hard, pulling them out of tune. The revised manuals stress light plucking.

2. Posture and Strengthening Devices. Two actions helped the student associate erect posture with the violin hold. In the "Statue of Liberty Game," the violin was raised high (like a torch) before being transferred to the collarbone. In the "Case Walk," the students carried their cases high over their heads or in front of their bodies like a tray. Both actions encouraged a beneficial backward inclination of the torso.

A balanced stance, in which the feet are placed a few inches apart and the knees are slightly bent, was stressed in the film and manual. The teacher was encouraged to help the student shift his body weight from one foot to the other when signs of tension in the lower part of the body were present. (The weight shift during playing is discussed in "Extending the Bow Stroke.") While the correct sitting position was explained for future reference in the film and manual, the standing position was recommended for all playing activities.

Problems. Where the teachers taught in small, crowded classrooms, it was difficult to move; students were seated, often in cramped positions. Some teachers, overly concerned about note reading, used music stands in the initial stages. This approach made it difficult for the teachers to assist the individual student in the development of good posture and a flexible body attitude.

3. *Early Use of the Middle and High Positions.* The successful use of large shifting movements as a means for improving violin positions and posture in the University of Illinois Summer Youth remedial program suggested the possible use of large, free movements in beginning classes as well. The prevalent custom of staying in the first position for a long time stifles the progress of the left hand and causes excessive tension in the left arm and shoulder. Restricting the left hand and arm to one location causes static tension in the entire arm which, in turn, slows the development of shifting techniques and vibrato.

To overcome this problem and to give the beginner a more comprehensive view of the fingerboard, the following actions were suggested.

At the first lesson "rest position" was established. The pupils then lifted the violin to the "middle position" while playing left hand pizzicato. A few lessons later, through the use of the "Shuttle Game," the hand was moved back and forth between the first and middle positions. Still later, the "Shuttle" was expanded to include the highest positions.

The "*Shuttle*," an important innovation of the Project, was practiced in various formats in the early stages as described below. (All are done without the bow.)

a) The hand is moved silently between the first, middle, and high positions.
b) The "Shuttle" is combined with left hand pizzicato. The upper fingers pluck in the three fingerboard locations.
c) "Tapping" is combined with the "Shuttle." The third finger strikes the string and rebounds with a quick, spring-like movement. The student taps either the top plate of the violin (left of the G string) or the string in the high, middle, and low positions.

These various forms of the "Shuttle" offered a wide repertoire of shifting activities for the beginning student. Additional variations of the "Shuttle" are described in the summary "Basic Shifting Movements."

Problems. The trial teaching of beginners indicated that the excellent form which can easily be established in the middle positions can just as easily be ruined during the descent to first position. From the correct form in the middle position the beginner commonly descends to first position by forearm pronation and by caving in the left wrist instead of moving the entire arm. The difficulties with this particular phase of instruction indicated necessary changes in the order and timing of these actions. Consequently in the retrial of the first year materials and in the revised film and manual, the following points were stressed.

a) The violin hold must be reasonably secure and firm before the "Shuttle" is introduced. The use of a small shoulder pad (sponge or rolled-up wash cloth) is recommended for some students.
b) The correct placement of the hand in the first position should be practiced and emphasized before the "Shuttle" is studied. Mnemonic devices are useful from the very beginning of instruction. The base of the first finger joint is marked with a line, and an x is marked on the side of the base joint. The x is placed at the edge of the fingerboard; the line must be visible at all times!
c) The left hand should be placed in the highest positions without delay. This speeds the development of the correct violin hold, since the student finds this action uncomfortable when the violin is held in front of the body.

Summary. Work in the Project has indicated that free and unrestricted movements are highly beneficial to the technique of the left arm. Most of the local children developed vibrato in their second year of study.

Recently, there has been an increased interest in starting beginners in third position. (The Project Director experimented with this idea in 1937, during his student teaching days.) In other experiments, students have begun in the fifth position (fingering is the same as first position) or fourth position (the most natural for the left hand, and the first finger can be matched with the adjacent open string).

All of these proposals have merit, as the left arm is placed in a more comfortable position: it is less extended and can be guided by the rib of the violin. There is, however, the problem of increased string distance from the fingerboard and shorter string length which make tone production much more sophisticated and bowing much more difficult.

Finally, early position playing may postpone but not solve the real problems of correct hand and finger placement in the first and second positions. The Project films and video tapes witness a penetrating success in solving the common problems of left hand and finger placement in the first position. These aspects of instruction will be discussed in the summary "Establishing Left Hand and Finger Placement."

Learning to Hold the Bow

Holding the bow was taught concurrently with the establishment of the violin hold, although some of the violin holding exercises described above took slight precedence for reasons of musical reward and motivation. (The violin, to a certain degree, can make music without the bow, but the bow cannot function by itself as a musical instrument.) The ideas tested were the following:

1. Use of dowel stick or pencil to prepare for the bow hold
2. Initial use of the "Early Bow Hold"
3. Silent lifting and placing of the bow
4. Use of "Shadow Bowing"

The trial teaching of skills related to holding the bow did not suggest that substantial changes from the original procedures and goals were necessary.

1. Use of dowel stick or pencil. Teachers preferred to use a pencil, more readily available than a dowel stick. As a visual and mnemonic aid, the pencil was marked with one quarter inch tape for easy location of the thumb and middle finger.

2. Initial use of the "Early Bow Hold". In the eighteenth and nineteenth centuries, the bow was generally held an inch or more away from the frog. Later the bow hold was moved next to the frog to enable the player to produce a more robust sound. The higher bow hold facilitates light playing, while the contemporary bow hold is conducive to greater power because of its increased torsion and leverage.

In some of the Project classes, the bow was first held at the balance point, where most of its weight (approximately 2 ounces) is supported by the string. Gradually, the bow hold was transferred toward the frog where the third and fourth fingers must produce approximately a half pound of supporting pressure when the player lifts the bow or plays at the frog.

Whether or not the "Early Bow Hold" was used, the objective was to achieve a natural bow hold, one in which the hand and fingers have maximum resemblance to the natural resting position of the hand. The bow hold must not become stiff, nor should it become undefined and flabby. When the fingers became stiff, corrective actions were applied: "Tap the Fingers," "Rock the Bow," and "Roll the Arm." When the bow hold became too loose, the corrective action was "Place and Lift." Throughout the Project these and other sensory inputs were frequently provided to develop the concept and feel of good form and movement.

At the conclusion of the trial teaching, more than 90 per cent of the teachers expressed approval of the "Early Bow Hold."

Problems. The children in the Project had their share of the usual problems with the flat thumb placement. All beginners refuse to expose the sensitive finger tips to the hard and cutting surface of the stick, frog, or string; they prefer to use the flat finger pad below the finger tips. To teach the children the correct thumb placement, the thumb-middle finger circle concept was emphasized in all Project publications. However, only emphatic and skillful teaching can insure that the beginner learns the correct position of the thumb, rather than the more comfortable but incorrect flat thumb placement.

3. Silent Lifting and Placing of the Bow. After the bow hold was established (without the instrument), the pupils were taught a procedure which enabled them to hold the bow and the instrument simultaneously.

a) The violin hold was established and the bow was hooked on the extended left little finger.[2] The student arranged his fingers on the bow (either with the "Early Bow Hold" or the regular bow hold) and then placed the bow on the string at the middle.

If, in the process of transferring the bow to the string, the bow hold became a stiff bow-grip, corrective actions ("Tap the Fingers," "Rock the Bow," "Roll the Arm") were practiced to unlock stiff joints. The bow transfer between the supporting little finger and the supporting string was practiced repeatedly until the pupils were able to form the bow hold and correct the usual faults by themselves.

b) Next, the "Place and Lift" was practiced. The bow was lifted about eight inches above the string as the arm and bow moved as a unit, then the bow was placed on the string in a controlled manner. When the lifting action caused stiffness in the fingers, the corrective actions mentioned above were repeated.

c) Silent Bow Transfer. This included transferring the bow from the supporting left little finger to the string, practicing small, circular, counterclockwise movements from the shoulder to keep the shoulder blades and shoulder flexible and relaxed, and transferring the bow with arched, circular movements from one spot to another.

4. Use of "Shadow Bowing." The purpose of this action was to help to establish reasonably good motion patterns with the bow before attention was diverted by tone production, fingering, and intonation. The action also taught the coordination of movement with sound, as the bow was moved silently and rhythmically to the rhythm of melodies. "Shadow Boxing" was practiced: (a) over the shoulder, (b) through a tube, and (c) silently above the strings.

All of the cooperating teachers liked this action, especially variation (a), as it encouraged the beginner to move the forearm from the elbow. "Shadow Bowing" through a tube had its pitfalls, since many of the children held the tube at an incorrect angle which caused excessive upper arm movement.

At a later stage, the bow was moved silently above the strings. This helped to develop a secure bow hold. However, it was necessary for the teacher to guard against and correct stiffness which frequently occurred during this action. (The corrective actions "Tap the Fingers," "Rock the Bow," and "Roll the Arm" were repeated throughout the trial teaching.)

"Shadow Bowing" above the string also allowed the teacher to hear individual pupils during the class period. As one pupil played alone, the others moved their bows above the string without sound, being ready to take over the solo at any time. (Frequent solo playing during the class challenges the child and helps to develop his appreciation of a good tone.)

Playing at the Middle with Short Strokes

The first bow strokes were practiced in the middle third of the bow. The following ideas were emphasized:

1. Natural Bow Hold
2. Flexible Elbow Joint
3. Flexible Shoulder Joint
4. Good Tone Beginnings
5. Good Tone Releases

1. Natural Bow Hold. A relaxed bow hold, halfway between extreme flexion and extension of the hand and fingers, was encouraged at all times. The careful process of establishing the bow hold, placing the bow on the string, and maintaining a correct bow hold was continued as the children played their first strokes. All of the children in the local classes and the great majority of the students in the Project centers had excellent or better-than-average bow holds. The first year Project evaluation in Wilmette (June 2, 1968) indicated that the often-found ungainly high wrist was absent.

2. Flexible Elbow Joint. A universal tendency of beginners is the use of upper arm movements exclusively (as if sawing) in the early stages. This is more natural than the sophisticated coordination of the various parts of the arm required for a good stroke. Since the exclusive use of any limb produces a curved movement, such natural movements, originating in a single joint, can be used only for the shortest strokes. When the stroke must be longer than an inch or so, movements originating in at least two joints must coordinate for straight bowing.

To induce movement in the forearm, "Shadow Bowing" over the left shoulder became a well-liked study; in this position the beginner must open the elbow joint or the bow will fall off the shoulder.

Problems. In some of the classes where cramped violin positions were common, stiff elbow joints were also evident. Cramped violin positions accentuate the use of the upper arm. The correct teaching of bowing hinges on the skill and determination of teachers to realize good violin placement.

Most of the cooperating teachers stated that their Project classes showed better bowing skills than their usual classes.

3. Flexible Shoulder Joint. To avoid stiff right shoulders, the Action Studies emphasized the early use of string crossing movements. Slurred string crossing movements on open strings were among the first exercises that were practiced along with the "Roll the Arm" relaxation study.

This action emphasized the rotary upper arm movement, which is extremely important in coordinating the various movements of the right arm and hand. The shoulder must be free at all times to allow for three types of movement:

a) Horizontal upper arm movement
b) Vertical upper arm movement
c) Rotary arm movement

When the player engages in a), he must not stiffen the muscles that are used in b) or c). Unfortunately, this is a very common occurrence among string players.

It is also common to stiffen the upper arm when forearm movements are emphasized. The more the movement and exercising of the forearm, wrist, and fingers is emphasized, the greater the likelihood of stiffening the shoulder or inducing uncoordinated movements. The teacher must always emphasize the movement of the *whole* rather than its isolated parts. This does not mean that there is *no* movement in the smaller parts, only that these movements are passive rather than intended. The most common error is to *stop* the natural swinging of the upper arm (which the beginner instinctively wants to do) in an effort to encourage the forearm movement from the elbow joint.

Practices that lead to immobilization of the upper arm should be rejected (placing the elbow against the wall, on the knee, etc.).

At all times the smooth coordination of the upper arm and forearm must prevail. Both the upper arm and forearm must be employed in every stroke--only the proportion of their movement changes. This can be achieved only be sensitive balancing of the arm through the use of rotary upper arm movements. When the forearm movement is directed at a slight angle to the plane of the bent arm, upper arm rotation will occur. This turns the arm into a veritable see-saw. Thus, the natural upper arm movement of the beginner must not be stopped altogether, merely *minimized*; it should always complement the dominating forearm stroke.

Emphasis on a relaxed shoulder, round string crossings, the feeling of a buoyant elbow, and a weightless, floating sensation of the right arm are helpful in avoiding or correcting the common fault of stiff bow arms.

Problems. In the opinion of the Project Director, this elusive facet of right arm training needs much more study. The viewing of films and reading of manuals did not enable the cooperating teachers to transmit this skill reliably. Intensive teacher training is necessary, in which the teacher is taught to *feel* and *demonstrate* the arm balance shown and described in the Project films and manuals.

4. Good Tone Beginnings. The beginners were asked to experiment with tone beginnings, contacting the string at various places between bridge and fingerboard. They applied the hair with varying degrees of intensity in order to gain the feel, as well as the sound, of the various contacts. There were no particular problems with this phase of instruction.

5. Good Tone Releases. The beginner commonly stops the bow on the string at the end of the down-bow or phrase, choking the last note. An element of finesse can be brought into basic instruction by teaching the beginner to release tones with "follow-through" movements to avoid stopping the movement suddenly and choking the sound.

The "Rebound" stroke (a concept introduced by the Project Director in his Basic Principles of Violin Playing[3]) was introduced early in the Project. Counterclockwise circular movements were used in successive down-bows, and the kinesthetic feel of down-bow releases, similar to that of the "Rebound," took place at phrase endings. The light, upward arching of the stroke and the slight support by the thumb, second, third, and fourth fingers at the moment of release lighten the bow pressure on the string and bring the movement to a graceful ending.[4]

Principles of Left Hand and Finger Action

This film and manual not only explain basic principles of left hand technique but also demonstrate differences in individual technique which are both permissible and desirable. Close-up shots of Robert Gerle,[5] Endre Granat, Leonard Sorkin,[6] Paul Rolland, and his students are presented to demonstrate individual solutions to violinistic problems, and to show typical faults and their solutions. No teaching materials were issued with this film and manual, both of which were planned as explanatory rather than developmental.

After a reasonably correct stance and secure violin position are established, the posturing and refinement of the left hand should begin. Although the basic role of the left hand is to stop the string, its behavior is also crucial to tone production (through the quality of finger application, left arm support, and vibrato).

The discussion of the position and function of the left hand includes the problems of Balance, Elevation, Thumb Placement, and Finger Angle.

Balance. The left hand and fingers are well-balanced when all four fingers can reach and play their respective notes without undue strain. In such a case, the most convenient position of the middle fingers determines a median or compromise position which is suitable for most playing requirements. However, this balance may temporarily be given up in favor of the lower or higher fingers. In this case, these fingers will have maximum strength and comfort. In order to shift balance from the lower to the higher fingers, or vice versa, or to change to the median position, slight adjusting movements in the hand, wrist, and thumb are necessary.

Elevation. For different purposes, the left hand may be placed higher or lower in relationship to the fingerboard. The higher location allows for a greater relaxation of the extensor muscles of the hand and is generally favorable to greater percussive power of the fingers, providing a crisp articulation. A lower elevation generally allows an increased range of the fingers and favors smoothness of finger action in cantabile playing. Excesses in high or low hand elevation should be avoided.

Thumb Placement. The role of the left thumb is to offer slight support to the violin and to counteract the pressure of the fingers. The work of the thumb should be light and sensitive, never squeezing or grabbing. Whether the thumb is placed forward, backward, high, or low on the neck is a matter of individual choice. The thumb's most natural lateral placement may be most easily found simply by closing the hand. In this position the thumb muscles have the least tension. When the thumb is moved too far *behind* this natural position, its muscle on the first finger side will contract. Sustained use of this position can cause a cramped thumb muscle, as described by Flesch in his *Art of Violin Playing*.

When the thumb is moved too far forward, the large muscle on the palm side contracts. Thus, a sustained use of this placement should also be avoided to prevent excessive tension. Between these two extremes, a normal lateral placement of the thumb can be found.

With artist players, the lateral placement of the thumb in the first position varies between locations adjacent to the notes from A^b to B^b or even B natural on the G string.

The height of the thumb in relation to the neck varies with the individual player. Support can be provided (a) by the base of the thumb, (b) by contacting the neck around the joint between the nail and second phalanxes of the thumb, or (c) by a low thumb with contact on the inside of the nail phalanx.

When the thumb support is toward the nail joint, usually the thumb is also farther back on the neck, opposite the first finger or slightly behind it. A forward placement of the thumb is usually paired with a deeper neck placement, with the nail phalanx of the thumb at times quite free and above the fingerboard.

Artists and professional players may or may not use a typical thumb placement. Changing the thumb contact in a lateral and vertical direction is common among artists, who may constantly vary the placement of the thumb as they play, depending upon the needs of the moment.

There is, however, a consensus among artist players to avoid excessive pressure and rigidity in the thumb. They use their thumbs in a flexible and sensitive way, providing just enough support for the fingers. This is, unfortunately, not the case with most students, who tend to grip the neck rigidly between the thumb and first finger. This tendency hampers shifting and vibrato techniques and results in cramping and poor finger articulation. Excessive gripping is usually caused by: (a) poor placement of the violin on the collarbone or shoulder, (b) placement of the thumb too much on the side of the neck, or (c) a combination of a and b. These faults are common.

Whether the thumb is placed high or low, it should provide sufficient support from under the neck to oppose finger pressure, bow pressure, and violin weight. Squeezing the neck horizontally wastes effort. Faulty placement of the thumb in the low positions can be corrected by proper placement of the violin and elbow, and by maintaining the correct angle of the fingers, as explained in the section which follows. In the high positions, the thumb generally supports the throat of the neck with the nail phalanx. Since the base of the first finger is free, there is little danger of gripping the neck horizontally.

Angle of the Fingers. Artists place their finger tips on the string with utmost efficiency. The angle of finger placement is critical for maximum ease of application and for the best tonal results.

Movement of the elbow to the right or left changes the finger angle. When the elbow is held too far to the left, the finger tip strikes the string on its outer side, interfering with the string on the right. This same fault is also caused by a sideways bending of the wrist. The opposite fault, an elbow placement too far under the violin, causes part of the finger tip to miss the string and waste finger pressure on the fingerboard.

Thus, the finger angle (provided the wrist is not bent sideways) is largely governed by placement of the elbow. The angle is correct when the finger tip covers the string without interfering with the string on the right. To avoid such interference, it is advisable to contact the string on the inner side of the finger tip (especially the first and second fingers), directing the finger pressure backward toward the scroll, not forward toward the bridge. The player should seek an elbow placement which permits the fingers to press the string against the fingerboard with maximum efficiency.

The elbow changes its position to allow the fingers to obtain the best angle on the various strings. The elbow should be placed farther under the violin for playing on the G string, and less under when on the E string. A flexible shoulder, which permits an easy adjustment of the elbow for the best finger angle, is, therefore, very important.

The careful placement of the first finger on the string, contacting the string slightly left of center of the finger tip and leaning toward the G strings and the pegs (not to the right and forward) is a crucial element of left hand training. (See also "Establishing Left Hand and Finger Placement in the First Position.")

Finger Tip Contact. The angle of the first and second fingers is usually steeper than that of the upper fingers. When the finger tip touches the string near the nail, articulation is crisp and percussive. When the finger-string contact is farther back from the nail, the tone is smoother and not as bright. Both types of placement are used, but continuous use of the extremes should be avoided.

Contact of the First Finger Base. A light "brushing" contact at the base of the first finger is maintained much of the time. Fast passages and soft sustained tones are enhanced by the slight sideways support of the hand; however, when playing intensive sonorities and using a wider vibrato, most performers tend to relinquish the contact at the base of the first finger. Some artists and teachers advocate a complete release of the first finger base from the neck. This is feasible for certain hands (usually those that are broad and have a short, low-set thumb) but can cause much tension for others because an exaggerated inward turning of the left elbow usually results.

Establishing Left Hand and Finger Placement in the First Position

The principles originally presented in this area of instruction were:

1. Alignment of the Four Fingers in Close Position
2. The "Octave Game"
3. The "Percussion Game"

1. Alignment of the Four Fingers. When the hand is relaxed in the usual violin playing position, the four fingers naturally fall into a close (chromatic) finger pattern. This basically relaxed position was stressed in the Project. The fingers were placed in a straight line on a pencil or stick. As the right hand held the pencil, the fingers clung to the stick, simulating the feel of finger pressure against the string. The students were taught to direct the finger pressure against the inside (left side) of the finger tip, and to pull the first finger backwardl in order to play diatonic patterns in tune.

Initially, the hand was placed in the middle positions, and the children were encouraged to slide silently up and down, clinging to the string with all four fingers, as with the pencil.

2. The "Octave Game." The purpose of octave playing was to improve intonation by matching the open string and its stopped upper octave, and to use the relatively weak third finger. (The still weaker fourth finger was strengthened by intensive left hand pizzicato.) The G, D, and A strings and their upper octaves were matched and played with staccato and slurred bowings.

Pieces based on the octave by Stanley Fletcher were among the early tunes studied by the Project classes. (The Fletcher tunes are discussed in Chapter Fourteen.)

3. The "Percussion Game." In this study the students were asked to drop the fingers of the left hand on the string with enough impact to obtain an audible sound. This technique eventually led to pitch orientation at the beginning of a piece in a professional manner. Not all students attained this skill during the early stages, but it challenged them to achieve greater agility.

Problems. This area of the research presented more difficulties than any other and prompted several changes in the original program.

It became obvious that the intensive use of left hand pizzicato and shifting drills, while valuable, did not solve the usual problems of positioning the left hand in the first position. The typical finger placement of all beginners (right of center instead of left of center) occurred among many of the Project pupils. The excellent left hand positions established as the strings were plucked with the hand in the middle positions tended to disappear during the descent into the first position: the students preferred to lean the hand back and turn the forearm outward (pronate), instead of moving the whole arm with the wrist remaining straight.

The poor left hand placement in the first position typical of all beginners is probably caused by their reluctance to expose their sensitive finger tips to the cutting feel of strings. It is a natural tendency to touch and feel with the fleshy ball of the finger, not with the sensitive finger tips near the fingernail. The reluctance of beginners to place the finger tips in a correct but uncomfortable position causes the following faults:

a) collapsing the wrist laterally, toward the player
b) bending of the wrist sideways, with the hand leaning to the right
c) squeezing the neck between the thumb and first finger
d) tucking the hand under the neck
e) pressing the finger forward toward the bridge

To overcome these tendencies, the following steps were emphasized:

a) The left forearm must be (approximately) straight when viewed from the player's right side or in a mirror.
b) The left forearm must be straight when viewed from the scroll or in a mirror.
c) The base (first crease) of the first finger must be approximately in line with the E string edge of the fingerboard, which it brushes slightly. Thus, a three-point, flexible contact is maintained at the neck of the instrument in the low positions by the fingertip, thumb, and base of the first finger. It is most important that none of these contacts develop into a rigid grip and that movement and slight adjustment are always possible at these three points.

   Eventually, the contact at the first finger base may be relinquished when the player uses intensive vibrato or plays above the third position.
d) The angle of the finger on the string must be controlled: the first and second fingers contact the string slightly left of the center of the finger tip, leaning to the left and toward the G string peg.

Mnemonic devices were used to establish desirable habits:

1. A face was marked on the first fingernail, and the students were told to "look into the finger's eye." The finger must not "lie down" or "go to sleep."

2. The side of the first finger base was marked with an X and the inside crease was marked with a line. The X must be placed on the E string side of the fingerboard; the line must be visible at all times.

3. After the first, second, and third fingers had been correctly positioned and the "Octave Game" regularly practiced, a surprising problem arose: several of the Project teachers went through the motions of the "Octave Game" without training the ear to recognize and blend the pitches. They failed to realize that the physical motions will not automatically result in correct pitch and that students must be reminded to correct false octaves.

The octave matching between the first finger and the second open string on the right did not prove to be practical and was abandoned.

Extending the Bow Stroke

This area of instruction dealt with an acute and common problem of public school string instruction: lack of freedom of movement and the general tendency to use short, inhibited bow strokes at the middle section of the bow. The use of long, free bow strokes requires a motion synergy, coordination of many movements of the whole body; it also demands greater accuracy in keeping the bow at the right point of contact with the string.

The instruction included:

1. Silent Transfer of the Bow
2. Exploring Various Parts of the Bow (" Wandering") in Free Rhythm
3. Short Strokes with Lifted Bow Transfer
4. String Crossings at Various Parts of the Bow
5. Swinging with the Beat
6. "Flying Pizzicato"
7. Down-Bow strokes with Arched Returns ("Rebound")
8. Accompanying Melodies with Long Strokes
9. Long Strokes Followed by Rests

1. Silent Transfer of the Bow. The purpose of this exercise was to develop the kinesthetic sensation of bow placement at all parts of the bow. The student was asked to place the bow at the middle, tip, or frog, transferring it between these points without producing sound. He was asked to maintain a good bow hold and a point of contact approximately half-way between bridge and fingerboard, with the hair at right angle to the string. If, during the transfer, the bow hold became stiff, the "Roll the Arm" and "Rock the Bow" relaxing exercises were practiced to eliminate stiffness. After the bow was placed on the string, a passive feeling in the hand was encouraged.

2. Exploring Various Parts of the Bow ("Wandering"). The bow was moved from one section to another while simple bowing patterns were played without interruption. The upper arm and forearm participated in all parts of the bow, but in various proportions. The wrist and fingers were kept flexible and contributed passively to the stroke. After practicing simple repetitious bowing patterns, the students played name and word rhythms in the same manner. "Wandering" proved to be an

excellent device to teach the student to play comfortably and easily in the various sections of the bow.

3. Short Strokes with Lifted Bow Transfer. The purpose of this exercise was to teach the student to play rhythm patterns with equally good articulation at various parts of the bow.

4. String Crossings at Various Parts of the Bow. This action was basically the same as (2), but it was practiced on two strings in order to develop flexibility in the shoulder and wrist.

5. Swinging with the Beat. This was a preparatory exercise to relax the body. The children swung their arms or their violin cases, with the pulse of the music.

6. "Flying Pizzicato." In this exercise, long pizzicato movements were practiced with coordinated, balancing body movements. The purpose of this simple exercise was to dissolve body stiffness. The free, pizzicato movements were directed forward, outlining the path of a free, long bow stroke.

A slight transfer of body weight was encouraged during the movement. In fast strokes, the body movement was bilateral: as the right hand was cast forward, the body weight was slightly shifted to the left foot and forward (the scroll also moving to the left and forward). In slow playing, the transfer of body weight was unilateral: in the direction of the stroke and anticipating it slightly.[7]

In this cyclical motion, the forward movement was active. The returning movement was passive--a continuation of the curved down-bow movement. At first, the teacher helped to establish a leisurely movement by guiding the pupil's right hand and violin scroll, pulling them slightly forward and apart in the down-bow and returning them in the passive up-bow movement.

7. Down-Bow Strokes with Arched Return ("Rebound"). This movement was the logical continuation of the preceding exercise. The repeated down-bow strokes were first played with small, counterclockwise, elliptical patterns. The size of the patterns was gradually increased until the whole bow was used.

The movement with the bow had the same characteristics as the "Flying Pizzicato" described above. It was directed forward and passively returned with a looped movement. The slant of the violin was slightly altered during long strokes as a result of the weight shift. (The flatter position of the violin at the tip and the increased tilt at the frog benefit bowing.)

The "Rebound" was first practiced with the "Early Bow Hold" for greater ease and freedom; gradually the bow hold was moved to its normal location. The movements were studied first in free rhythm, and later in measured time.

8. Accompanying Melodies with Long Strokes. The children enjoyed performing the "Flying Pizzicato" and "Rebound" actions during open string accompaniments to familiar melodies. The musical background helped the students to develop beautiful and graceful movements.

9. Long Strokes followed by Rests. The purpose of this study was to teach smooth bow changes at the tip and frog and sequential movements, in which the body leads and the arm, hand, and bow follow. In "down-up-rest," two long strokes were combined with a smooth follow-through.

The students were taught to avoid jerking the arm at the moment of the bow change. The arm and bow were returned passively with a looped motion in either a clockwise or counterclockwise direction. During the rest, the movement was smoothly continued in the air with the arm gradually losing its momentum as the body reversed the direction of its movement.

"Up-down-rest" was used to teach smooth bow changes at the frog. Smooth follow-through movements were used at the end of the down-bow, as the body reversed its movement in preparation for the next upstroke. The students learned to continue the movement of the bow in the air, or to stop the bow with an arched motion of the hand and frog.

Problems. The principles and exercises described in this section are among the most significant and characteristic of this Project.

As could be expected with new and unusual procedures, not all of the teachers taught these actions correctly during the first-year trial. In some Project classes, the subtle balancing movements were exaggerated; in other classes, the movements were regimented or poorly timed.

The "Flying Pizzicato" exercise was often done with a backward rather than forward movement of the arm, and with a unilateral instead of a bilateral movement. These errors were not as common during the retrial of the first-year materials, since the filmed demonstration of local students was available.

Since the "Flying Pizzicato" and "Rebound" actions are simple and effective exercises when correctly taught, they were introduced early in the instruction during the retrial.

These extensive movements helped to establish free movement and a relaxed body attitude. The well-coordinated students showed movement in the body, head, and violin, as they played long bow strokes. The stance was balanced, and the knees were flexible. This was a wholesome contrast to the "rigor mortis" of beginners.

Developing Finger Movement

The crucial problems of finger angle described above continued to receive careful attention. The following aspects of technique were introduced:

1. Use of the Fourth Finger
2. Vertical Finger Movement
3. Horizontal Finger Movement
4. Finger Movement Across Strings

1. Use of the Fourth Finger. Beginners are generally reluctant to use the weak fourth finger. The extensive use of left hand pizzicato with the fourth finger, an important innovation of the Project, strengthened the weak extensor muscles.

For stopping the string the fourth finger was first introduced in its low position, a half step above the third finger and a major third (or diminished fourth) above the first finger, an easier position than the more common first position placement on the open string tones. This somewhat unusual finger pattern was used in Fletcher's "Blue Lullaby," a point of departure in training the fourth finger. The fourth finger in its normal position was soon studied. The students reviewed familiar repertoire, substituting the fourth finger for the open string whenever feasible. After diatonic melodies were practiced, the fourth finger was also used in skips. The second Exercise Record provided additional materials.

2. Vertical Finger Movement. This is the simplest action of the finger. In teaching speed of movement, the instructors emphasized clean articulation, rather than excessive force: the fingers were thrown and lifted with spark-like action from the base knuckle, not from the small finger joints or the wrist. Excessive finger pressure and grabbing with the thumb were discouraged. "Percussion Play" encouraged crisp articulation on the finger tips, and challenged the students to test the pitch before playing with the bow. The master cellist, Pablo Casals, often used this device. The Exercise Record Number Two and the "O'Malley's Reel" and "Mayday Dance" by Stanley Fletcher provided good materials for this chapter of left hand development.

3. Horizontal Finger Movement. Chromatic movement of the fingers is a commonly neglected phase of early violin instruction. Students in the public schools are often given a restricted diet of the "2-3" pattern in the G, D, and A Major keys.

Chromatic finger movement is a beneficial device in developing finger flexibility, especially in the nail joint. This weak joint is often immobilized by disuse. The fingers should acquire versatility in contacting the string: at times they should be placed nearer the tip, with the nail joint flexed and in a steep position; at other times, the nail joint should be more extended and should contact the string nearer the ball of the finger.

For instance, when the second finger is in its low position (playing B^b, F natural, C natural, and G natural), it is placed on its tip in a steep position; in its high position (playing B, F#, C#, G#), the finger is slightly extended forward, is less steep, and contacts the string farther from the finger nail. The ability to move freely between the low and high positions is a very important element of left hand technique, one required not only in chromatic finger movements but also in the slight adjustments necessary for correct intonation.

A number of the Fletcher tunes (for example, "Sweet Melody," "Ragtime Tune," "Tenor Aria," and "Soft Shoe Shuffle") and Exercise Records Numbers Two and Three provided materials for teaching this technique.

4. Finger Movement Across Strings. Finger movement across strings occurs during left hand string crossing activities and in double stops. These activities are related, because each string crossing activity is potentially a double stop and should be treated as such. In string crossings, the finger should precede the bow, stopping the string in advance. This procedure momentarily produces a double stop.

The first activities of this topic included the playing of double stops in which one note was the open string. This action demands careful finger placement: the open string must be cleared while the finger stops the adjacent string. Repeated practice of this action induces the use of arched fingers and good finger placement on the finger tip. This technique was used in the "Serenade" and other tunes of Fletcher and in drills of Exercise Record Number Three.

In a second type of activity, crossing is accomplished from one finger to another. In this, the "new" finger must be placed on the string before the "old" finger is lifted. The notes were frequently tested as double stops, and their intervallic relation was discussed. This relationship was pointed out in tunes such as "America the Beautiful" and "On Top of Old Smoky."

Problems. It is difficult to convince the young student to use his fourth finger; he finds it so much easier and more comfortable to play the open strings. This is a vicious circle. Because the beginner neglects to use the fourth finger, it remains tender and weak.

The intensive use of left hand pizzicato (to strengthen and desensitize the weak little finger) in tuning and other activities described above in "Establishing the Violin Hold" was invaluable. The teachers who followed the Project directives in this respect experienced few problems with the early introduction of the fourth finger. However, where tuning "short cuts" were taken, the teachers experienced the usual difficulties.

It is difficult to practice long finger exercises in a class situation. Since busy finger work is seldom in unison, the class tends to sound like drones in a beehive. To overcome this problem, a few typical short patterns were introduced with Exercise Record Number Two and were practiced at various speeds in string cycles.

A general problem in horizontal finger movement is the tendency to move the hand instead of the fingers for half-step adjustments. The inability to flex and extend the finger joints is one reason for this problem. Poor finger angle is another: if the fingernails are turned toward the G string (instead of the player's face), the fingers flex and extend at a right angle to the string. Therefore, it is important to align the hand and establish the finger angle correctly, as described in "Establishing Left Hand and Finger Placement." When this alignment is correct, the fingers can perform chromatically without movement of the whole hand or arm.

The film "Developing Finger Movement" was helpful during the second year of instruction. Unfortunately, it was not available during the first-year trial because of production delays resulting from the fire in the Motion Picture Production Center.

Basic Shifting Movements

The basic elements of shifting were introduced during the third week of instruction for the following reasons:

1. Shifting movements (especially large ones) dissolve excessive tension in the left arm and hand caused by the sole use of the first position.

2. It is advisable to give the students the idea that the entire fingerboard is used in string playing, not just a small part of it.

3. Learning this important technique should not be delayed.

During the first stages of study and while practicing on the open strings, the student placed the left hand in the middle positions (approximately fourth position), as described in "Establishing the Violin Hold." This contributed to his comfort and security while learning to hold the instrument.

During the first shifting activities, the specific fingerboard positions were not defined. The students placed the hand in the first, middle, and high positions, as the teacher offered guidelines for hand placement, for example:

a) The left hand must be on the right side of the neck (not under it).
b) The first crease of the first finger is approximately in line with the E string edge of the fingerboard when the hand is in the low and middle positions.
c) In the high positions, the nail member of the thumb is placed at the throat of the neck.

d) The left arm should not be rigidly fixed in the shoulder joint--it should "float."
e) The weight of the instrument is sufficiently supported at the chinrest area so that the hand may move freely between the low-middle, middle-high, and low-high positions. (The hand may help, to some degree, to support the instrument.)

These principles were stressed throughout the instruction in the "Shuttle" exercise. The first variations of this action were presented in the summary "Establishing the Violin Hold." After the students were able to draw reasonably long bow strokes, the following version of the "Shuttle" was introduced. The "Ghosts" (E string) and the "Flute" (G string): one finger (preferably the third) slides lightly up and down the entire length of the fingerboard to produce the harmonic series (played arco).

The children enjoyed performing Stanley Fletcher's "Birds at Sunrise," a charming study of harmonic glissandos.

As the students made progress with their bowing, the octave harmonics were played by simply touching the string with the fourth finger at the octave marker. This gave the concept of a true octave when played alternately with the open string. When the harmonic octave was compared with the same stopped pitch in first position, an interesting variant of shifting exercise, the "Octave Game," evolved.

Stepwise Shifts. The preceding shifting activities did not involve shifting with fingers stopping the string. (This is more difficult because of the friction between the fingers and string.) Stepwise shifts were introduced in melody fragments transposed through eight positions. Between the positions, the players tested the pitches involved in the shift by playing "ghost tones" with left hand pizzicato or very soft bow strokes. Later, these notes were fingered but not sounded.

Longer Shifts. Shifts exceeding a whole or half step were first introduced in fragments of simple tunes previously studied in first position. Scales, arpeggios, and octaves on one string were practiced next with all fingers. They were introduced with the third finger, the first and second fingers also being placed on the string with light finger pressure. Shifts using the same finger in both positions preceded compound shifts (change of finger during shifts).

This chapter of the curriculum brought gratifying results. The early shifting studies not only made courageous position players of the local children within two years of study, but also helped to develop a free and relaxed left arm and vibrato.

The frequent excursions to the top register of the violin had a salutary affect on the violin hold, as it is impossible to play high on the G string with the instrument held in low, stooped position.

The trial teaching brought no radical changes in the concepts introduced, but it significantly changed the order and timetable of presentation during the retrial of the materials.

The "Shuttle" game was delayed for about two or three weeks until the violin became relatively secure at the shoulder area. However, the exploration of the top register was introduced much earlier in the form of silent left hand placement in the high positions. Natural harmonics were introduced at a much earlier stage. Since the hand was normally held in the middle positions while playing the open strings, practicing the octave harmonics was a natural consequence. The second harmonic octave of the open string, played alternately between its lowest and highest occurrences on the string (first position, third finger; and near the end of the fingerboard, with the third finger) became a highly beneficial and popular exercise of the second-year classes.

Problems. There were a number of typical problems that plagued practically all of the beginners, some of whom learned to overcome them much earlier than others. The most common problems were the following:

1. Poor placement or support of the instrument caused excessive gripping with the left hand, which in turn hampered shifting.

2. Above the fourth position, the students hooked the thumb around the throat of the neck; this made it impossible to reach the top register of the fingerboard and created excessive tension in the wrist. (Advanced players who fall into the habit of forced wrist bending may develop an annoying and sometimes painful cyst in the hand or wrist from this fault.) When the player ascends to the top register, he should anchor the nail joint of the thumb at the throat of the neck. (Players with very large hands may be excepted from this rule.)

3. Excessive finger and thumb pressure hampered shifting. Unnecessary friction causes undue effort.

4. The left hand position deteriorated during shifts, causing loss of finger balance. It is common for students to shift with only the hand and fingers and to avoid making the necessary adjustment in the arm. This disturbs the relationship of the fingers, causing faulty intonation and lack of string holding security. In good shifting movements, the attitude of the hand remains basically the same in the first through fifth positions. Above the fifth position (or the fourth, if the hand is small), the hand must come around the rib of the instrument to raise the level of the hand, and the wrist must bend.

In the local classes, these problems were solved by the end of the second year. The children were able to shift lightly and easily between the first and highest positions when playing harmonics, scales, arpeggios, and octaves on one string. Three octave scales were then introduced. As could be expected, the children occasionally missed notes, but the basic attitudes were correct, and the refinement of intonation remains a matter of time.

Bouncing the Bow

The early introduction of spiccato bowing was both beneficial and stimulating to the beginners. The "Early Bow Hold" was used to create a feeling of lightness in handling and bouncing the bow. Bouncing the bow develops a feeling for bow balance: the fulcrum is between the thumb and middle finger, which act as a unit with the third and fourth fingers in supporting and bouncing the bow. The first finger does not lift the stick; it rests passively on top of the bow. Bouncing bows were introduced in the fourth month of instruction without difficulty.

The techniques introduced in this area included:

1. Shoulder Loosening Exercises
2. Silent Bouncing the Bow with the "Early Bow Hold"
3. Glancing the Bow with the "Early Bow Hold"
4. Spiccato Playing with the Regular Bow Hold

1. Shoulder Loosening Exercises. Since spiccato bowing is essentially a vertical action, the shoulder joint must remain flexible to allow for rotary and vertical movements. The "Roll the Arm" exercise was practiced frequently as a preparation for spiccato bowing.

2. Silent Bouncing of the Bow with the "Early Bow Hold." The students dropped the bow perpendicular to the string, moving the arm and bow as a unit. The only sound produced was the percussive noise of the hair hitting the string. The students practiced name and word rhythms by rote, always aiming for a free and light movement in which the bow and arm rebounded passively. Emphasis was placed on free arm movement containing elements of abduction and adduction, as well as some rotary movement of the upper arm. The teachers were advised to guard against a rotary movement of the forearm, which can be the cause of a fixed upper arm.

3. Glancing the Bow with the "Early Bow Hold." After the silent bounces were rhythmic and well-controlled, the bow was glanced against the string at a more obtuse angle. The smaller the angle of impact was, the smoother was the sound produced. The students experimented with spiccato sounds which were termed "crisp," "round," or "flaky." In the last type, the bow hair was turned toward the player and "brushed" strings gently.

In the spiccato, forearm extension and flexion was added to the rotary upper arm movements. Care was taken to avoid emphasis on wrist and finger movements, since these should always come about passively. If the bow is held without stiffness, and the upper arm and forearm move in the correct proportions, the small parts will contribute to the stroke naturally. This is analogous to the subconscious movements of the ankles and toes in walking. Intentional moving of the hand and fingers focuses the attention on the part instead of the whole, causing coordination problems and fixation of the elbow and shoulder.

4. Spiccato Playing with the Regular Bow Hold. The normal bow hold was gradually used for spiccato, according to the skill of the individual child. The criterion for moving the bow hold was whether the student was able to bounce the bow without stiffening the fingers. At all times, the goal was to maintain light balance in the hand and arm.

There were no problems in this phase of teaching. The children enjoyed playing bouncing bows in open string rhythms, string crossing exercises, scales, and pieces. The feasibility of the early introduction of bouncing bows in string teaching was firmly established.

Martelé and Staccato

Martelé and staccato strokes are important for the development of good attacks, releases, and vitality in bowing. The skills developed were:

1. Silent Bow Pressure Exercises
2. Contrasting Smooth and Accented Tone Beginnings with very short Strokes
3. Slow, Slurred Staccato Strokes
4. Martelé and Martelé-Staccato Strokes with Longer Bows
5. Group Staccato or Tremolo Staccato

1. Silent Bow Pressure Exercises. The students were shown how to apply and release bow pressure using the leverage of the arm. They placed the bow on the string at the balance point and continued the downward motion until the stick momentarily touched the hair. This movement was repeated many times with the "Place and Lift" action until the student gained skill in "dipping" the hair into the string. Care was exercised to avoid stiffening the fingers. At no time were the children told to press the bow with the fingers. The bow pressure was obtained by a clinging, not a pushing, sensation. The hand and fingers remained passive, the pressure coming through the fingers, not from them. As the pressure was applied, the small finger joints were in a state of flexion, rather than extension. The upper arm was lowered and raised with each string release and contact.

2. Contrasting Smooth and Accented Tone Beginnings with Very Short Strokes. The students practiced very short strokes using down-bow returns ("Rebound") between the balance point and frog. The sounds were either very smooth (mom-mom) or crisp (pop-pop). In the smooth strokes, the bow was gently placed and started without pressure. In the accented strokes, the hair was pressed into the string, then lightly moved up or down at the instant of lift, producing a little "pop." After the students refined the tone quality obtained by the tiny explosive strokes, they gradually increased the horizontal movement, lifting the bow less and less. Eventually, the bow remained on the string without choking the sound at the end of the short "collé" (also called "piqué") strokes.

3. Slow, Slurred Staccato Strokes. When the player combines two or more of the preceding accented strokes on the same bow stroke without lifting the bow, slurred staccato bowing results. This was first practiced with very short strokes with both down- and up-bows. Care was taken at all times to avoid choking the sound. The stroke must be arched upward at the instant of release, in order to avoid a pressed, choked sound.

4. Martelé and Martelé-Staccato Strokes with Longer Bows. Gradually, the length of the single strokes was increased to produce the martelé stroke on either the down- or up-bow. Similarly, the lengthening of the horizontal element in slurred staccato strokes created the martelé-staccato.

In both of these bowings, the motion must be instantaneous and buoyant. The arm moves "swiftly as an arrow."

5. Group Staccato or Tremolo Staccato. When groups of two, three, four, five, six, etc. separated notes are played on the pulse, we may speak of group or slurred staccato. This was studied with repeated notes and a slow, steady beat. Some of the children were able to play only two or three staccato notes satisfactorily on a pulse; others had no difficulty playing more notes.

In the "tremolo-staccato," a rapid tremolo was played near the tip and coordinated with a slow up-bow stroke. When the speed of the slow up-stroke is well chosen, the two movements will synthetize into a rapid staccato. To produce a clean sound, the bow hair should be well-rosined and tilted toward the fingerboard. This is a sophisticated technique which was acquired by only a few children in the second-year classes.

Problems. The teaching of martelé and staccato requires great patience and persistence. At first, the accented strokes must be alternated with rests, as it is important to apply the pressure a split second before the attack. This anticipation of the bow pressure presents a problem, since in most of our bowings the pressure is applied as the movement is started. As a rule, the martelé and staccato technique represents a departure from the student's established habit pattern. Therefore, it is difficult for them. Students instinctively apply the pressure and move the bow simultaneously, producing a smooth "pressure accent" rather than the desired crisp bite. This technique should be introduced without delay, in order to avoid habitation of a one-sided motion pattern in which the pressure is always applied concurrently with or directly after the beginning of a movement.

Developing Flexibility

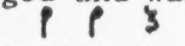
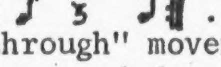
The early instruction in this Project stressed the use and mobility of the large parts of the body. Flexibility was induced through slight motions in the whole body, including the knees, waist, shoulders, neck, upper arm, and elbow. During the early stages, little attention was given to the movements of the hand, fingers, and wrist. However, the relaxation exercises described in the preceding summaries were frequently practiced and reviewed to induce *natural* movements in the wrist and fingers without diverting attention from the concept of tone and from a total motion synergy.

Isolated finger and wrist movements during playing were avoided, as these tend to disturb the coordination of the whole. The less the concentration on the small movements, the less is the danger of fixation of joints adjacent to the moving part. This principle does not mean that movement in the fingers or wrist was restricted, but rather that the small movements were encouraged to *occur* without thinking much about them. (The subconscious movements of the wrist, hand, and fingers are similar to those of the ankles, feet, and toes in walking or running. It is not necessary to think about these movements. If there is stiffness in any one of these parts, the movement will be awkward.)

The actions included under this heading were:

1. Sequential Action and Follow-Through
2. Developing Strength and Flexibility in the Wrist and Fingers (Silent Bow Gymnastics)
3. Continuous Short Strokes
4. Flexibility in Sustained Strokes
5. String Crossings

1. *Sequential Action and Follow-Through.* In sequential actions, the motion starts in the body or in the large parts and flows gradually into the small parts. "The greater the number of muscles engaged in a movement, the more accurate and graceful is the movement."[8] Such motion synergy is used in all long strokes, and its introduction--at least in a simple form--should not be delayed. An example of this type of action ("Flying Pizzicato") was discussed under the title "Extending the Bow Stroke."

During approximately the sixth month of instruction, the following action was introduced. The bow was raised toward the ceiling, as high as the students could stretch; at this point, the students were asked to move the bow a little higher (follow-through) by raising the hand and flexing the fingers. This follow-through motion was encouraged and was frequently practiced in two note patterns followed by rests:  During the rests, the arm, hand, and fingers "follow-through" with the bow in hand, as in the silent exercise. This exercise was played in scales and chords; about two months later, the motion was reversed so that the release came at the tip of the bow: . The students were encouraged to incorporate the "follow-through" movement during bow changes at the frog, in order to connect the up- and down-strokes smoothly.

2. Developing Strength and Flexibility in the Wrist and Fingers (Silent Bow Gymnastics). These exercises did not offer any new concepts or materials. The students practiced finger and hand movements in the following actions without the instrument.

a) Rotating the bow. In this exercise for thumb flexibility, the hair was turned until it touched the flexed thumb, then turned away from the thumb. (This is similar to Capet's Roulé.)[9]
b) Crawling up and down the bow. This exercise is attributed to D. C. Dounis.
c) Teeter-totter. This widely-used exercise was used to develop a balanced bow hold. The bow was moved back and forth in a vertical plane between the nine o'clock and three o'clock positions.
d) "Drop-lift." The hand was alternately dropped (flexed) while all fingers were extended, and raised (extended) while all fingers were flexed. Carl Flesch introduced this well-known exercise in his *Urstudien*.[10]

The above exercises were not emphasized in the Project but were introduced and recommended to students with weak or stiff fingers and wrists. However, during play the feel of the total motion pattern was emphasized, not details of movements. Eventually, most of the students developed flexible bowing. The Project's particular success in this area was attributed to the emphasis on the movement of the entire body, rather than emphasis on intensive drill in localized finger and wrist movements.

3. Continuous Short Strokes. In this action, the concept of "Wandering" (discussed in "Extending the Bow Stroke") was reviewed. The purpose of this exercise was to develop flexible bowing and the legato stroke in all parts of the bow. The upper arm and forearm participated in various proportions; finger and wrist flexion-extension movements were added to these basic movements for smoothness of sound and movement.

4. Flexibility in Sustained Strokes.

a) The bow was held near the tip in the left hand. The right hand (forming the bow hold) pulled in down-bows and pushed in up-bows against the resisting left hand. In down-bows, the fingers were flexed and the wrist was lower; in up-bows, the fingers were extended and the wrist was higher.
b) With the violin and bow, the students played slow, intensive strokes in scales and double stops, pulling and pushing the bow against an imaginary resistance. They attempted to simulate the feel of the resistance in the silent exercise above.

5. String Crossings. String crossing movements were practiced from the very beginning of instruction, since these are very important for the development of flexibility in the shoulder, wrist, and fingers. The all-important rotary movements of the upper arm can most easily be developed through string crossing movements.

In about the seventh month of instruction (after the silent "Roll the Arm" and slurred string crossing exercises of "Learning to Hold the Bow" were practiced), bariolage patterns were introduced. In these, looped string crossing motions with passive finger and wrist movements were encouraged, but a fixed upper arm was scrupulously avoided. Slight rotary movements of the upper arm accompany all string crossing movements, causing a slight "bobbing" of the elbow. A "buoyant" elbow was encouraged at all times.

Problems. This phase of teaching did not present any particular problems.

Frequently, teachers are at a loss to know when and how to introduce needed refinement into the beginners' crude strokes. The Project literature offered guidance in this respect. A typical problem in this phase of instruction is that the smaller movements of the wrist and fingers are either completely missing or, when emphasized, become localized, causing stiffness in the shoulder and coordination problems. Ideally, the smaller movements flow out of the larger ones. They should not be superimposed on a static arm. An exception to this rule is in the fast playing of short strokes when the hand and fingers may take the initiative for quick string crossings and accents.

It can be expected that when the "follow-through" movements and the hand (wrist) and finger motions are first introduced, they will be greatly exaggerated. The teacher must guard against this; when the wrist and finger movements become excessive, or when the bow hold becomes too loose, lifting exercises, a slightly firmer bow hold, and attention to precise articulation will help. Eventually, the smaller movements can assume their modest role in the total action synergy needed for a particular task.

Three tunes by Stanley Fletcher, "Slumber Song," "Hora," and "Country Fiddler," provided repertoire for the development of string crossings and flexibility.

First Steps in Vibrato Teaching

It was assumed that vibrato can be taught, as are the other motion skills of string technique, and that problems of vibrato are those of motion technique rather than of emotional origin. The following actions were studied:

1. Relaxation Studies (preparatory to vibrato)
2. Tapping Studies (preparatory to vibrato)
3. Finger Vibrato
4. "Wrist" Vibrato
5. Developing Left Arm Balance (arm participation in vibrato)
6. Intensity Vibrato
7. Practicing Tones with Vibrato

1. Relaxation Studies (preparatory to vibrato). The left arm, the wrist, and the thumb were relaxed by swinging and moving them. "When something is stiff, move it" was the frequently-applied principle. The thumb was tapped and moved back and forth; the wrist was gently bent in and out; the arm was frequently dropped and swung while the right hand held the violin in playing position. Swinging the upper arm in and out was particularly helpful.

2. Tapping Studies (preparatory to vibrato). Tapping the finger tips against the top of the violin, or against the strings, was practiced frequently. Name and word rhythms or fragments of tunes were tapped with quick, energetic movements and whip-like motions, not with localized finger movements. These exercises were done as preparatory games, without the students' being aware that they were done for the vibrato.

3. The Finger Vibrato. The teacher introduced the vibrato by vibrating the student's fingers. This created interest and experimentation on the student's part, but it usually resulted in an uncoordinated finger pressure fluctuation. Nevertheless, this was encouraged as the following exercise improved the feeble early attempts.

4. "Wrist" Vibrato. This commonly-used term is a misnomer, as the movement is made by the hand, and the wrist is rather passive in this act. (The other elements of vibrato are also identified by the moving parts, not by the joints; we speak of forearm and arm vibrato, not elbow and shoulder vibrato.)

This movement can be taught by simple means. When the student tries to vibrate by pulsating the finger pressure (as discussed above), he usually squeezes the neck between the thumb and the base of the first finger. This horizontal pressure, which prevents hand and arm movements, can be released by pulling the left hand to the right side of the neck, so that the base of the finger will only gently "brush" the neck or may even pull away from the neck. The teacher should help at first by wedging his first finger between the student's violin neck and first finger base. If the hand and arm are sensitively balanced, the finger pulsation will naturally bring about hand oscillations. Some students learn this almost instantly; others need a long period of patient practice and experimentation. The preparatory relaxation exercises will eventually dissolve static tensions, which are an obstacle to good vibrato.

In coordinated finger-hand movements, the increased finger pressure brings out a slight forward dipping of the hand. As the pressure is relaxed, the hand passively returns to its original position. The forward and backward action should be considered as an unbroken single vibrato cycle, not two separately-energized movements. The tapping exercises mentioned above are similar and correct in this respect; therefore, they have a good carry-over into vibrato skills.

The finger and hand movements were practiced in cycles of one, two, three, etc. complete movements. The hand was moved quickly (as if tapping), not slowly with deliberate rollong motions, as it is often the case.

5. Developing Left Arm Balance (arm participation in the vibrato).

Essentially, the vibrato consists of fast repetitious left hand (arm) movements similar to the rapid détaché, tremolo, and sautillé movements of the bow arm. Arm balance (discussed in "Principles of Movement in String Playing" and "Sustained and Détaché Bowing" is essential for the efficient performance of these motions. Critical for the ideal vibrato is a sensitively-balanced arm, capable of horizontal and rotary movements originating in a free and flexible shoulder.

When the arm is balanced, the backward and forward swinging of the hand is counterbalanced by the slight inward and outward rolling movements of the upper arm. These movements are involuntary and are the signs of a perfectly balanced arm. When this delicate balance is lacking, the movements are of the push-pull variety which require greater effort.

Balanced vibrato movements are similar to everyday movements such as knocking on a door, using a salt shaker, rubbing, polishing, clapping, and patting. In all of these actions, the backward and forward movements are done with a single impulse, and with practically no action impulse on the returning movement. As mentioned above, the backward and forward movements of the vibrato should form a single motion cycle; these movements must not be separated by giving impulse to both the backward and forward phases of the movement, as this causes excessive tension in the antagonistic muscles. This error is the cause of stiffness and freezing of the left arm, which in turn causes a feeble vibrato or complete inability to vibrate.

Balanced arm movements were practiced without the violin: a) with a stick between the two hands (as demonstrated in the film); b) with the fingers of the left hand leaning and "vibrating" on the back of the right hand. With the violin in "rest position" and in regular position without using the bow, the balanced arm action was practiced: a) sliding back and forth; b) anchoring a finger; c) anchoring the thumb only; d) anchoring the thumb and fingers.

In all of these actions, the aim was to establish a light, effortless, balanced action, in which the hand and upper arm rotates around an imaginary axis which crosses the shoulder joint and the forearm just below the elbow. (These precise, yet complicated, descriptions are offered to the teacher, not to the student. Students comprehend simple visual, kinetic, and tactile demonstrations and guidance far more easily than intellectual and verbal descriptions.)

6. *Intensity Vibrato.* After the student was able to perform an even and balanced arm vibrato movement, he tried it while bowing on the *open strings*. An even and relatively slow vibrato movement produces an intensity vibrato on the open strings caused by the periodical movements of the violin. The student was taught to listen for regular intensity waves. The intensity vibrato is part of the regular vibrato, whose other ingredient is the fluctuation of pitch.

7. *Practicing Tones with Vibrato.* The second and third fingers were emphasized during the early vibrato attempts. These central fingers can maintain arm balance during the early stages more easily than the first and fourth fingers can.

At a later stage, the "Tap and Hold" exercise was introduced: the student alternately tapped and held the finger down on the string following a single tapping action; while holding, he was encouraged to move the hand as if tapping. These attempts eventually led to correct vibrato movements.

Problems. The teaching of vibrato is in its infancy, when compared to other aspects of violin technique. Until recently, it was believed that vibrato could not be taught, that it was of emotional origin, and that the talented player, sooner or later, would acquire the skill.

However, most of the children in the local Project class developed at least an acceptable vibrato in two years of study. The success of this particular phase of technique is attributed to the emphasis on left arm balance and mobility. However, not all children acquired a good vibrato easily, as they showed widely differing proficiencies and time spans in learning the skill. One reason for this problem was that in class teaching it was not always possible to find enough time to give the necessary attention to individual students, whose vibrato and motion problems varied greatly.

Typical problems were excessive gripping of the violin neck and excessive finger pressure. In some instances, this was caused by poorly adjusted violins (bridge or nut too high, raising the strings too far above the fingerboard). Another typical fault was the overstimulation of the antagonistic muscles. The labored and irregular movements caused fatigue and bad tonal results.

The diagnosis and correction of faulty vibrato movements demands expertise and patience. The following typical faults and remedies are offered:

a) Stiff, unyielding finger joints can be gradually improved by patient practice of relaxation exercises and chromatic (horizontal) finger movements that demand flexion and extension of the finger joints.
b) Stiff wrists can be relaxed through pivoting shifts (shifting back and forth while the thumb is anchored) of a whole step to a perfect fourth range.

c) Irregular, too slow, or too fast vibrato can be corrected by timing the movement. (Bump the back of the first finger against the E string peg, or bump the nail joint against the extended first finger of the right hand.) The goal is to regulate the speed so that it is even and falls within the range of artistic vibrato (approximately five to eight cycles per second with an average of 6.7 per second).

d) The extent (amplitude) of the vibrato is not matched to the volume. Loud tones demand a wider vibrato than soft tones. A narrow vibrato movement superimposed on a loud tone will barely be noticeable. Conversely, a soft tone associated with a wide vibrato amplitude can result in a comical and offensive sound.

Even with a balanced and even vibrato movement, the player should judiciously control the vibrato amplitude. A too-wide vibrato may be tightened by focusing the movement on the finger tip, by using smaller movements, and by slightly firming the finger and wrist joints.

A tight and too-narrow vibrato may be improved by relaxation exercises, reduced finger pressure, and greater flexibility in the finger joints and wrist.

The film "First Steps in Vibrato Teaching" demonstrates the early teaching techniques and shows the progress of the Urbana Project class during the first year of study. Video and filmed reports of later performances show greatly increased skills and surprisingly mature tone production for such young players developed through the class approach.

Sustained and Détaché Bowing

Introduction. Sustained strokes and détaché are the most frequently used bowings in string playing. They are essential to good bowing technique, and their instruction should begin during the early stages. The common element in both types of bowing is that the bow is changed without interruption. In détaché bowing, the tones and motions must not be "detached" from one another, as one might surmise from the name of the stroke. Rather, they should be fused without a break. There are also substantial differences between the sustained stroke (son filé) and détaché, mainly because of variations in speed and articulation.

The skill of sustaining tones evenly and for a considerable duration is a highly-coveted art in singing and in playing a wind instrument. The early masters of string playing emphasized the importance of the son filé. Allegedly, Viotti practiced sustained strokes daily for hours and held a single stroke as long as fifteen minutes.

Practicing slow and even bow strokes develops strength and control in the arm, but if incorrectly done, it can also cause stiffness. The early methods started with the study of long sustained strokes, a practice that was gradually discarded. Most of the methods published after 1910 introduce short strokes (détaché) first. Of these, the method by Ferdinand Küchler is the most thorough and successful. It begins with single strokes requiring the controlled beginning and release of single tones. However, since continuous playing requires different coordination from the playing of single strokes with long intervening rests, the wisdom of this approach is just as dubious as is the playing of very slow bow strokes at the outset. It is much more natural to study short but continuous (cyclic) strokes in the early stages, thereby avoiding too much stopping, which causes stiffness. Thus, for the first strokes, exploratory short détaché strokes, ad libitum, without rhythmic requirements, are recommended. The repetitious strokes should be practiced on all strings to avoid fixing the upper arm in the shoulder joint. After the beginner achieves some security in playing repetitious détaché strokes in free rhythm, he should study definite rhythm patterns ("name and word rhythms") which require controlled starting and stopping of tones.

Détaché Bowing. The systematic study of the détaché develops good arm balance, flexibility, and articulation.

Mobility and flexibility in all parts of the arm, a relaxed shoulder, and good tone production are the primary goals. Good motion patterns require the proper apportioning of the forearm and upper arm movements. The beginner intuitively uses his upper arm in experimenting with the first bow strokes. The "horizontal upper arm movement," described by Carl Flesch,[11] is a natural movement and an important ingredient of the détaché. However, it should be kept within proper limits and always combined with the closing and opening of the forearm.

In good détaché bowing, both the upper arm and forearm move all the time; however, the proportion of the two movements changes according to the part and length of bow used. In the lower part of the bow, there is only a little forearm action; at the middle and upper parts of the bow, there is much more forearm action and only a very slight upper arm action. However, some movement should take place in both the forearm and upper arm at all times.

When the proper rationing of these two movements will help to keep the bow straight and eliminate stiffness in the shoulder, there is a third and very important type of arm movement which often escapes the attention of teacher and player: the slight rotary movements of the upper arm, which are instrumental in establishing good arm balance and which help to equalize the bow pressure during the stroke.

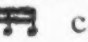
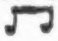
The slight involuntary rotary motions are natural in such everyday actions as tapping, clapping, using a salt shaker, rubbing, etc. They will occur when fast repetitious movements of the hand and forearm are not in the exact direction of the shoulder. Since rotary movements require less effort than pure flexion-extension movements, it is desirable to incorporate at least a slight rotary movement in the détaché stroke, thus turning the movement into a balanced action.

In the Project classes, these repetitous movements were practiced throughout the course. By inducing movement in both the upper arm and forearm and by the frequent changing of strings, stiffness was avoided in the shoulder and elbow joints. Firmness of tone was developed by releasing much of the weight of the relaxed arm into the string. At the same time, slight wrist and finger movements were encouraged, as described above in the summary "Developing Flexibility." By using a passive, yet firmly clinging bow hold, the students learned to play with a large tone while retaining flexible finger and wrist joints.

Articulation. Differences between simple, accented, and expressive détaché were studied in pieces and scales. Accentuation was developed by bending the stick during the bow change. When the stick is bent slowly and gently during the bow change, an articulated, yet expressive, détaché is produced. A similar articulation, when superimposed on sustained strokes, produces portato strokes. In this connection, reference should be made to the work of Lucien Capet mentioned above.

When the rapid détaché is played with short strokes it can easily be transformed into sautillé by deflecting the stroke at an angle to the stick (toward the floor) and by finding the suitable location between the balance point and middle of the bow.

In a relatively slow tempo (MM = 60), sixteenth notes played with short strokes will usually begin to bounce just below the balance point. At MM = 90, they tend to bounce a little above the balance point. The repetitions must be quite fast (approximately MM = 152) to cause the bow to bounce at the middle.

The repetitious movements were first practiced with a tapping movement without the bow. In actual playing,  can be played with as little effort as  in tapping, because each tapping movement contains a down-up motion. The inexperienced player tends to give a separate impetus to each down- and up-bow in a fast tempo, thus working too hard and usually becoming very stiff.

Tremolo bowing was introduced during the second year of the Project curriculum. The students enjoyed this bowing, which they played very lightly near the tip in a relaxed manner.

Tone Colors. The second-year students explored sul ponticello, sul tasto, and col legno in scales, exercises, and pieces.

Sustained Strokes. Sustained tones demand careful control and matching of:

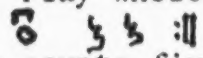
1. Point of Contact
2. Bow Speed
3. Bow Pressure

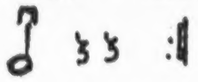
During the early phases of teaching sustained strokes, the main concerns were:

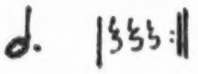
1. Straight Bowing
2. Even Bow Distribution
3. Even Bow Pressure at the point of contact. (The difference in the bow's weight at the frog and the tip compels the player to increase the pressure in down-bows and decrease it in up-bows.)

Rotary upper arm movement was used to increase or decrease the weight of the bow.

The following exercises were used to develop good sustained strokes:

1. Even Bow Distribution. Play whole notes with slow, single down-bow strokes near the bridge.  Arrive at the middle of the bow on the third count. During counts five and six, slowly lift the bow and return it to the string with a smooth, circular motion.

Vary the time values: a) 

b) 

Repeat the exercise with successive up-bows, with down up strokes followed by rest, finally with continuous sustained strokes.

2. Developing Bow Pressure. Place the bow on the string at the middle and use the leverage of the whole arm to apply pressure on the stick. Bend it until it touches the hair. Hold the stick down for four counts, then release. Pulsate the bow pressure. (There is no sound.)

3. Pulling and Pushing the Bow Against Resistance to Encourage Passive Hand and Finger Movements. This and the next exercise promote a firm bow hold and the control of motions necessary for sustained strokes. Hold the bow with a rounded bow hold and grasp the middle of the bow with the left hand. Pretend to play a down-bow. Keep the wrist low and allow the fingers to bend as the left hand resists the pull. Pretend to play an up-bow, pushing the bow against the left hand. The wrist will be a little higher and the fingers a little straighter.

4. Drawing the Bow above the String ("Shadow Bowing".) Simulate slow whole bow strokes, moving the bow about an inch above the string.

Problems. In learning sustained strokes and détaché bowing, most of the students fell into one of two categories: a) they were stiff and uncoordinated; b) they were weak and enervated.

In long strokes, the tone was often indistinct and wavering. Frequent tendencies were to oversupport the arm with elbow held too high, or to raise the wrist too high, causing the stick to slant too much toward the fingerboard. Greater confidence and a better tone in sustained strokes resulted when the student was encouraged to hold the bow firmly, to release the weight of the bow and partial weight of the arm into the string (after starting the tone gently), and to use a contact point quite near the bridge. As soon as the student overcame the initial difficulties in beginning the tone and discovered that he could release considerable weight into the string even in slow strokes, he did not oversupport his arm.

Playing slow strokes on two open strings also helped the student accomplish this goal, since two strings will tolerate twice as much pressure as a single string.

Playing portato strokes developed needed controls for correct apportioning of bow pressure. The arm and bow should not stop between tones, and the articulation is achieved by bending and releasing the bowstick. Care must be taken to avoid stiffening the fingers or collapsing finger joints. The recommended formula for such problems is movement: whatever becomes stiff must be moved.

The two most common problems of détaché bowing are the excessive use of the upper arm from the shoulder and the complete immobilization of the upper arm. The latter is the more insidious problem, as this fault does not look as abusive and may remain undetected for a long time. Thus, the student can perpetuate the habit of a stiff shoulder. As a rule, the beginner will intuitively use the natural upper arm movement, a simple movement which should serve as a basis for all subsequent bowing movements. However, this motion alone can be used only for very short strokes near the balance point; when the strokes are longer than an inch or so, the forearm movement from the elbow must be combined with the slight swinging of the upper arm to maintain the parallelism of the bow. It is when all of the emphasis is placed on the forearm movement that problems occur, as the student finds it difficult to coordinate the two movements in the proper proportions and tends to stiffen or stop the upper arm movement altogether. The solution is to maintain some movement in the upper arm even when the forearm does the lion's share of the work. The teacher must be very careful to avoid fixing the upper arm when encouraging the forearm movement, because stopping the upper arm causes stiffness in the shoulder. Continuous repetitious movements ("Wandering" with the bow) between the tip and frog will help to dissolve stiffness and maintain mobility in all parts of the arm.

Fast détaché movements are especially prone to stiffness. The forearm movement should not be restricted to one plane but should be combined with a slight rotary movement of the upper arm. This rotary movement comes about unintentionally if the direction of forearm movement is not exactly within the plane of the arm (in the direction of the shoulder) but at a slight angle to it. The student will experience this movement if he is asked to perform an everyday action such as knocking on a door, tapping, clapping, using a salt shaker, polishing, or bouncing a ball. All of these movements will naturally bring about some upper arm rotation, a little of which improves détaché bowing. A slight amount of upper arm rotation, when combined with the détaché, will relax the shoulder and keep the upper arm moving at all times.

In addition to the motion problems, there are typical tonal problems which plague the student's détaché efforts. His détaché strokes tend to have a bland, washed-away quality. Bow changes should be made precisely with good synchronization of changes of finger and strings. Often the finger or new string is either anticipated or delayed. To avoid a certain tentative quality in tone beginnings, accented détaché bowings were frequently practiced. Pinpointing the changes of bow, finger, and string with a well-placed accent has a good effect on this problem. Also, the alternation of smooth and accented détaché helps the student to distinguish between various types of articulations. The accents can be sharp or gentle, requiring sudden or slow (and slight) bending of the stick during the bow change.

The bending of the stick for articulation, as well as the control of the slant of the stick, is a neglected phase of string study. The work of Lucien Capet is notable in this respect.

Another cause of indistinct détaché is a weak and too tentative bow hold. It is a mistaken belief that a firm (but flexible) bow hold will cause stiffness in the arm. The fingers may cling to the bow quite firmly without losing their ability to flex and extend (as long as the finger joints do not collapse). Similarly, the elbow and shoulder joints can be kept supple in spite of a strong but flexible bow hold.

A full and vital détaché tone is one of the most important assets of good string playing. It should be produced with flexibility in all parts of the bow arm by releasing the desired amount of freely gravitating arm weight through the flexible but clinging fingers.

Footnotes

[1] D. C. Dounis, *The Absolute Independence of the Fingers, Book One* (London: The Strad Edition, ca. 1924), pp. 3-66, and *The Artist's Technique of Violin Playing* (New York: Carl Fischer, ca. 1921), pp. 68-69.

[2] This technique was observed by the Project Director in a demonstration by Dr. Walter Haderer of San Francisco State College.

[3] Paul Rolland, *Basic Principles of Violin Playing* (Washington, D.C.: Music Educators National Conference, 1959), pp. 49-50.

[4] This technique is characteristic of the teaching of Ivan Galamian.

[5] Westminister Recording Artist.

[6] First violinist, Fine Arts Quartet.

[7] The terms *bilateral* and *unilateral* were first used in reference to bowing by Frederick F. Polnauer, "Bio-Mechanics, A New Approach to Music Education," *Journal of the Franklin Institute*, 254, No. 4 (1952), pp. 301-303.

[8] L. E. Morehouse and A. T. Miller, *Physiology of Exercise*, 3rd ed. (St. Louis: C. V. Mosby Co., 1959), p. 80.

[9] Lucien Capet, La Technique Superieure de l'Archet pour Violon (Paris: Éditions Salabert, 1916), p. 23.

[10] Carl Flesch, *Urstudien (Basic Studies)*, (New York: Carl Fischer, 1911), pp. 8-10.

[11] Carl Flesch, *The Art of Violin Playing, Book One: Technique in General, Applied Technique*, trans. Frederick H. Martens, 2nd revised ed. (New York: Carl Fischer, 1939), pp. 55-56.

CHAPTER SIX

THE PROJECT RECORDINGS AND THEIR RELATED TEXTS

Introduction

Although the main purpose of the Project was to prepare a curriculum for movement education in string teaching and to produce related visual aids, the production of supplementary recordings was considered necessary. The staff believed that audio aids would allow the teacher to offer manual assistance to the individual pupils. It was thought that recordings would also facilitate the teaching of routine tasks and repertoire, thus saving valuable classroom time which the teacher could devote to refining important motion techniques.

The development of supplementary audio materials was endorsed by Project consultants during their first meeting in November, 1966. (A complete report of this and subsequent meetings is presented in Chapter Seven.) The staff and consultants considered tape-recorded units to be the ideal aid for programmed instruction. However, they agreed that recordings, despite record player tendencies of pitch variations, would be more practical for the time being, since tape recorders are not common in the home. There were lengthy discussions concerning the size of the recordings to be produced. Although short recordings would be convenient, the cost of producing small-sized discs would be prohibitive. The staff and consultants decided that the three-to-five-minute recordings stipulated in the original proposal should be replaced by fewer twelve-inch recordings.

"Tunes for the String Player"

Since the goal of the Project was to produce materials compatible with any method book, the first recording is comprised of tunes commonly found in available methods.

A list of tunes was prepared by Don Miller and Kelvin Masson, Research Associates, and Jerald Slavich, Instructor in the Champaign Public Schools. The following tunes were selected: Hot Cross Buns, Jingle Bells, Mary Had a Little Lamb, Lightly Row, Old MacDonald, French Folk Song, Pop Goes the Weasel, London Bridge, Camptown Races, Skip to My Lou, Row, Row, Row Your Boat, Barcarolle, Jack and Jill, Oh Dear, What Can the Matter Be, On Top of Old Smoky, America, Daisy, Swanee River, and America the Beautiful. Two tunes suitable for motion games were added: Military March of Schubert and Londonderry Air. The Theme from the 4th Symphony of Tschaikovsky was included for increased use of the neglected minor third, and Handel's Joy to the World was added for a demonstration of the descending major scale.

A number of these tunes were orchestrated by Merle Isaac, and all were recorded by a string ensemble.

The record was produced with a continuous band so that it could be used for listening and practicing without interuptions.

Accompanying music for the record was published under the title "Tunes for the String Player." It was printed on colored loose-leaf sheets in the following forms:

1. "Rote Teaching Aid" on one side of the page and "Note Reading" on the other.

2. "Simplified Note Reading" on one side of the sheet and "Note Reading" on the other. The simplified note reading introduced the simple tunes with an interval range not exceeding a major sixth. The original materials included a "rote teaching aid" for every song, but after the trial phase, the conclusion was that the more difficult tunes should not be "simplified" by the rote process because the "simplification" became visually complicated. The very easy tunes were presented on a simplified staff consisting of one, two, or three lines. The assumptions were that the students would grasp the simplified staff easily, and that use of this system (which does not fix the pitch) would facilitate the transposition of tunes. The two types of materials were alternately used by Project classes; both were reported useful and helpful. No effort was made to compare objectively the relative merit of these systems, since the many other variables of the groups would have made an objective evaluation impractical.

The "Tunes for the String Player" records and accompanying music sheets were the first musical materials distributed among the Project participants. Most of the tunes can be used during the first year.

Exercise Records

The recording "Our First Exercises" includes basic drills using open strings, simple scales, and interval patterns, the latter including octaves, descending minor thirds, and major and minor triads, and slurred patterns.

"Our First Exercises, Set Two" introduces collé, martelé-staccato, and spiccato bowings. Also included are elementary shifting drills using natural harmonics, and tune fragments transposed through the positions. New finger patterns and exercises for left hand articulation and tone releases are presented.

"Our First Exercises, Set Three" offers additional drills for development of the bowings in Set Two. Portato and sautillé bowings are introduced. Vibrato studies, more advanced shifting and string crossing studies, and one- and two-octave scales with bowing variations are included.

Some of this material is beyond the usual ability of second-year public school classes. However, with improved teaching and higher standards, these materials should represent reasonable achievement standards for second-year string classes.

As an experiment, the musical materials accompanying the three exercise records were printed on 1/16th size pages (4" x 5½") in small booklets designed to fit into the pupil's violin case. These were enthusiastically received at first; however, the teachers soon reported dissatisfaction with the format, since the small booklets fell off the music stands. At the summary meeting, June 1, 1969, teachers recommended that the materials be reprinted in conventional size with larger notation.

Summary

The tune records and three exercise records provide basic and practical recorded materials for the first two years of string instruction. While not a complete "method," they can be readily combined with other methods or materials.

The music texts of the four records are submitted in Appendix F of this Report.

CHAPTER SEVEN

MEETINGS WITH CONSULTANTS AND COOPERATING TEACHERS

First Conference with Consultants
November 20-22, 1966

The following consultants attended the first conference:

Marjorie Keller	Dallas, Texas
Robert Klotman	Detroit, Michigan
Jack Pernecky	Evanston, Illinois
Marvin Rabin	Madison, Wisconsin
Roman Totenberg	Boston, Massachusetts
Howard Van Sickle	Mankato, Minnesota

Advisors and staff members also attending the meetings were Richard Colwell, Endre Granat, Charles Leonard, Kelvin Masson, Donald Miller, Daniel Perrino, Paul Rolland (all of Urbana), Margaret Farish, Evanston, Illinois; Carl Schultz, DeKalb, Illinois; and Frank Spinosa, Tempe, Arizona.

The following outline was prepared for the conference by the Project Director in consultation with the local staff. It was an attempt to put down in draft form some of the ideas the Project Director hoped to develop and to receive feedback from the consultants and advisors. A secondary purpose was to give the consultants and advisors the opportunity to suggest other innovative approaches to violin instruction that held promise of success.

Agenda for the First Conference

The main purpose of the Project is to develop materials to help the teaching of good motion skills in violin playing which are relaxed and free from excessive tension. The approach will be explained in teachers manuals and coordinated 16 mm films. These, along with three scheduled workshops, will serve as guides for the cooperating teachers and will remain a useful product after the conclusion of the Project.

Proposed Film Topics

The following films are being developed to help the teacher and student. The films will illustrate and explain the visual aspects of motion techniques and the order of teaching the fundamentals of violin playing.

(1) Introductory Film. The basic laws of human motion and body balance as common to violin playing, athletics, and dance.

(2) Left Hand. Establishing the position of the left arm and hand and shaping the hand to the fingerboard. Developing a mobile left arm attitude immediately via shifting movements. Establishing the correct stance. The use of open string tuning patterns as an aid to positioning the left hand and arm.

(3) Right Hand. Establishing the bow hold.

(4) Bowing. The first bowing movements at (or near) the middle of the bow, the section of the bow which is the easiest for beginners to use.

(5) Left Hand. Establishing the attitude of the left-hand fingers through octave playing on adjacent strings (0-3). The playing of tunes involving broken triads built from the open strings. The playing of tunes requiring a diatonic setting of the first three fingers of the left hand.

(6) Rhythm Training. Demonstrating rhythmic activities via clapping, tapping, marching, pizzicato, and bowing.

(7) Right Hand. Developing the martelé-accent. First attempts with staccato and spiccato.

(8) Left Hand. The matching of tones lying in both the first and the fifth (fingerboard) positions. First experiences with shifts involving definite pitches. The slow slide as a means of recognizing the pitch concepts "high" and "low." Two ways of correcting intonation: (a) the short slide or a "rocking" on the fingertip and (b) a replay of the interval to develop the fine-tuning of the ear in purely melodic and purely harmonic intervals. Finding the octave on the same string.

(9) Bowing. Playing in all parts of the bow, first with short strokes, then with longer strokes. The need for the player to develop control via repetition to the point of habit formation. Developing precision at the start and at the release of tones. The anticipation of movement.

(10) Left Hand. Further adaptation of the hand to the fingerboard by playing with "high" and "low" settings of the second finger, by playing with the fourth finger and matching its pitch to the adjacent open string, by outlining the various flexible attitudes of the thumb, and by playing tunes that stress the role of the fingers, hand, and arm during string crossings.

(11) Right Hand. Further stress on longer bow strokes and the development of means to control them. Additional means of coordination between the arm and other parts of the body.

(12) Left Hand. Further development of agility in shifting with emphasis upon dexterity simultaneously developed in the first and fifth (fingerboard) positions. The introduction of the second, third, and fourth (fingerboard) positions.

(13) Right Hand. Curved bowing movements in string crossings. The license permissible in activating good tone production through freedom of movement. Legato playing and smooth bow changes.

(14) Left Hand. The vibrato as a synthesis of previously learned ingredients of mobility.

(15) Tone Development. The even division and parallelism of the bow. Sustained tones.

(16) Right Hand. Introduction of a variety of articulations--détaché, martelé, portato, spiccato, and sautillé.

(17) Left Hand. The articulation of fingers in ascending and descending patterns. Reasonable rules for keeping fingers down. Developing speed.

(18) Right Hand. Faster passages in string crossings with détaché, legato, and sautillé bowings.

(19) Remedial Teaching. Demonstration and explanation of effective
& techniques for remedial classes.
(20)

Suggested Innovative Ideas

Tuning:

(1) Emphasis is placed on learning tuning skills from the start. At first, tuning is taught with left hand pizzicato which helps the formation of the left hand.

(2) Records are to provide a tuning band, and the manual will constantly remind the pupil to check his tuning.

Left Hand:

(1) Left hand pizzicato and early rhythmic materials are used extensively to shape the position of the left hand. Left hand pizzicato is played in the low and high positions to develop a mobile,rather than a static,approach to left hand functions. Thus, the beginner is presented with a more complete view of violin playing than is customary. This versatile treatment of the left hand will greatly help in relieving the common left hand "freeze" and will help to establish good form with relative ease.

(2) A new approach is offered in teaching left hand fundamentals by early emphasis of the role of the central fingers rather than that of the first. Consequently, most of the early tunes will be built on octaves and various intervals rather than on the diatonic scale. The use of materials structured on the 0-3 octaves, on 3-1 descending minor thirds, and on 0-2-0-3 root position triads (major and minor) will help to establish good hand position and good intonation. Many of the resulting tunes will be based on the pentatonic scale.

(3) Shifting techniques are first introduced with left hand pizzicato on the open strings at various points of the string. Later, shifting is practiced by matching notes and tunes between the first and fifth positions.

The early introduction of the fifth position is believed to help establish good left hand form in the first position, since it is impossible to collapse the wrist in the fifth position. If a student simply copies in the first position the form and feel of the hand as experienced in the fifth position, he will train his left hand to assume the correct position. Thus, experience with the fifth position will begin as soon as the student learns to play the octave of the open string, playing it on two strings, then on one string, using the third finger. A number of tunes will be treated this way and played alternately in first and fifth positions. Soon after the student accomplishes this skill, he will be shown how to play simple tunes in the other positions as well.

(4) The tunes and the few tuneful exercises employed will not exceed the range of one octave for approximately the first year of study. The tunes, however, will be transposed to the other strings ("String Cycles") and some of the tunes will be transposed into the upper positions. For example, a tune having a range of four tones will be first studied on the middle strings (to accommodate violas and celli in case of mixed class application), then played along the string cycle in the manner of Bornoff. (After learning the tune on one string, the violins will start on the E string and repeat on the A, D, and G strings. The violas and celli will continue on the C string while the violins rest.)

A new idea is presented by the "Position Cycles." A tune is started in the first position, then repeated in successively higher positions in diatonic or chromatic order until the fifth position is reached. This technique may be applied in ascending or descending patterns and across the strings. Some of the possible patterns are as follows:

Position Cycles

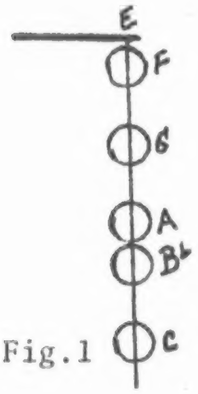


Fig.1

Fig.1 Beginning notes of tune fragments on the E string with the the first finger in ascending cycles.

Fig.2 Beginning notes of tune fragments with the first finger across the string and ascending.

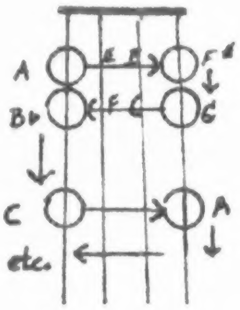


Fig.2

It is up to the teacher to fashion these cycles.

(5) Mobilizing the left arm from the beginning paves the way toward a good vibrato. Vibrato movements will be introduced and developed much earlier than is customary. This new approach will be implemented by combining shifting and tapping motions.

Right Hand:

(1) It is proposed that free bowing movements involving coordinated action between the fingers, hand, arm, and body be introduced from the start to present to the student a "Gestalt" approach to bowing activities.

Starting at the middle of the bow in the manner of Suzuki is acceptable, but it is recommended that larger and freer bow actions also be introduced early. This can be attained by "Shadow Bowing" exercises and by moving the bow hold nearer to the bow's balance point. The pressure of the little finger in supporting the bow at its normal location is approximately a half pound (full size bow) when playing at the frog or when holding the bow horizontally in the air. When the bow is held at the balance point, this pressure is practically nil. The lightness of the bow when held at or near the balance point permits free bowing movements with a good bow hold from the start. For further aid, a thin, non-slip sleeve will be wrapped around the stick for easier holding. As the student advances, the sleeve and his bow hold will be gradually moved down the frog.

(2) The best bowing movements are curved. The bow stroke on a single string generally follows an inner arch which approximated the curve of the stick itself. This arching of the stroke can be further exploited by a modification of the violin angle during the course of

the stroke: flatter when playing near the bow-tip, more tilted when playing near the frog. This movement is apparent in the playing of the best professionals, but it has not yet penetrated standard violin pedagogy.

(3) In addition to freedom of bowing and tonal gradations, the sensitive placement and correct release of the bow will be studied. Further refinement of the bowing will include string crossing techniques and study of the various types of strokes. These will be developed toward the end of the year.

(4) It is obvious that the concept of rhythm is closely related to rhythmic bowing ability and freedom of movement. The Project will place unusual stress on rhythmic preparation and a substantial amount of rhythmic material will be presented. This material will be studied first with tapping or clapping, then played pizzicato and with the bow.

Rote and Note Teaching:

(1) It is proposed that rote teaching techniques as well as the teaching of notation be employed. A balance will be sought in teaching materials, some of which will be taught by rote, others by note. Most of the early materials will be presented through imitative methods. However, rhythmic notation will also be introduced from the start, pitch notation gradually.

(2) Along with the technical materials, a syllabus for rhythmic activities will be prepared. Rhythms will be presented first on flash cards, later on rhythm charts. The materials provided for playing will be arranged so that the child will learn to play by rote and/or with the aid of tablature. Later, he will also learn to read from notes.

Additional Musical Materials

Records:

Since the teacher in the public schools is pressed for time,he should be given every opportunity to facilitate the teaching of routine requirements of string playing. Although the Project focuses on motion techniques rather than the production of such materials, the staff assumes that the teacher will find time for the teaching of correct motion patterns only if he has access to recorded materials to save time in teaching routine fundamentals. This is the justification for the records which the Project proposes to develop.

In this connection, the following points need clarification:

(1) Size of records?

(2) Interlocked or continuous bands?

(3) Should separate records be developed for study and for continuous listening and performance?

(4) Should records be provided for rhythmic study and note reading?

(5) Should special tape recordings be provided for the teacher's use in the classroom?

(6) Should tape recordings be considered for the student's use?

(7) Should the teacher's tape be structured differently from the student records?

The following materials will be recorded:

(1) Materials contained in the manual. These will provide most of the material for the first year of study.

(2) A series of pieces for study during the second year. Selection of these works will be supported by the recommendations of the ASTA Violin and Viola Committee of the past two years.

(3) Some additional technical materials. (The largest portion of the teaching materials will utilize musical composition rather than exercises. The supplementary Contemporary Music Project will provide additional materials for all phases of this Project.)

Manuals and Other Printed Materials:

(1) The student will receive a manual which will be suitable as an aid to rote learning as well as learning from notes. Supplementary materials for rhythmic notations will be provided in the form of 4" x 6" cards and more comprehensive rhythm charts. The rhythm cards will be suitable for use as a bowing supplement to materials in the manual, which will be indexed for rhythmic and technical enrichment.

(2) A series of add-a-part materials will be published to accompany the recorded literature. Some of this material will be taught by rote at the beginning. Most of it, however, will be taught from notation.

(3) A teachers manual will be developed and used as a commentary on the films and the student manual.

(4) Additional musical materials will be commissioned for all phases of the Project in connection with the supplementary Contemporary Music Project.

(5) The range of all materials will encompass two years of study. This will be interpreted so that the most advanced works will provide suitable materials for the talented student working under ideal circumstances. Pieces will be selected from the standard repertoire already available. Standard editions will be utilized whenever possible and the Project will record these.

Summary of the Conference Discussions

First meeting, November 20, 1966, 7:30 p.m.

The Project Director opened the meeting by giving a short background history of the Project and its goals. He explained the two main phases of the Project: the development of materials related to the principles of the Project and the trial teaching. (A detailed description of these is given in Chapters Two, Five, Six, Ten, and Eleven of this Report.)

The preceding agenda was presented to the participants. The remainder of the meeting is outlined below.

Question and Answer Period:

Q. Are the teachers or are the materials produced expected to be the source of change in the students?

A. Either or both.

Q. Should there be a control group to see if materials are effective?

A. This has already been discussed to some extent and the conclusion is that there is an inherent evaluation in the films, the media which will tie the program together.

Q. To whom will the films be directed?

A. To the teachers, but students should also benefit from them.

Q. Is the approach to private teaching different from class teaching? Will various levels be considered in regard to pedagogical materials?

A. Each teaching experience has its own function. There would be no difference as far as the type of teaching is concerned.

General Suggestions and Observations:

1. The Project should include parochial schools in the trial teaching, not just public schools.
2. The materials should be designed for use with any method book.
3. It is more important to teach correctly once a week, than to have a student come in daily for incorrect instruction.
4. A new breakthrough in violin teaching is hoped for.
5. Although the Project is to be focused on class teaching, the private teacher and student could equally benefit from the products.

6. The Project needs something that will project it into the 1980's. It should present something really different.

7. Do not include classes which meet only once a week in the trial.

8. Parental involvement is very important, but on the American scene the teaching cannot depend on it.

Suggestions Regarding the Films:

1. Film experts say that two-thirds comprehension comes from the picture and one-third from narration.

2. The text must be simple--geared to both teacher and student.

3. The Project may need to consult vocabulary experts who work well with children for help with the narration.

4. The narration should correlate the action of sports with that of concert artists.

Presentation of a Brief Summary of the First Three Film Topics:

1. The first film will deal generally with motion elements. It will include sports and dance as they relate to motion in string playing.

2. The second film will deal with the violin hold, left hand, and arm.

3. The work print of the third film, "Remedial Teaching," is ready. It will be shown on Tuesday, November 22. It contains some of the same elements as the films one and two.

The consultants accepted this outline and order of the early films.

Additional Questions and Answers:

Q. Would it be valuable to make films in the various centers during the two years of trial teaching to show pupil progress?

A. No, unless the children were photographed periodically. One must have before and after pictures with the same children. This would cause problems since children and teachers are on the move.

Q. Would films be shown just once or more than once? How is this going to be different from any other method? Why should there be a method book?

A. This Project is concerned with physical activity--not learning a method. The films should be shown repeatedly in conjunction with teaching.

Q. Is there any value in coming up with something in the way of a film that the child could take home? Is it valuable for a student to take home a film that he sees in the classroom?

A. This is doubtful. However, in the future, small cartridge films could be used by children, possibly by schools.

Q. Are recordings important?

A. Recordings are responsible for at least 50 per cent of Suzuki's success. They help in the teaching of fundamental skills which can be learned by rote. Early motion skills are best learned without the complications of note reading.

Q. What about the "hardware?"

A. There is an 8 mm projector called the Mark IV by Fairchild which the student could carry and use in the practice room. However, most machines of this type are very expensive and are therefore impractical to use in the Project. At the present, the 16 mm movie projector and disc are more practical. (However, the tape may come to the foreground.)

Q. Should the child play with the record or add-a-part?

A. General opinion--listen, then play. There was an objection to rote playing with the record when the student only imitates and does not play musically.

The meeting was adjourned.

Second Meeting, November 21, 1966, 9:00 a.m.

The Project Director opened the meeting with a description of the aims and methods of the Project.

General observations:

1. Other areas of teaching are adapting new methods and attitudes. These should be investigated and applied wherever possible. In reading programs and the "new math," children are first taught a method or a how rather than pure emphasis on the what of the material itself.

2. Current trends in teaching take into consideration ways in which children learn most easily. Visual and audio aids are used extensively. In the present Project tape recorders, records, and films will be used extensively.

3. It will be the responsibility of the cooperating teachers to make sure that the Project materials are used.

4. A guide should be furnished with the films.

5. The students should be given a total view of string playing.

6. The students should be taught to use the whole body--to start with the feeling of motion from the feet up through the whole body with emphasis on large movements across the strings.

Third Meeting, November 21, 1966, 2:00 p.m.

The Project Director opened the session with a discussion of the bow hold. He presented a sample thin foam rubber sleeve to be slipped over the stick to prevent it from slipping in the hand. This sleeve would be gradually moved downward to the frog as the student gained confidence in holding the bow.

Observations:

1. Most of the consultants felt that the rubber sleeve is not necessary, that the wood is more pleasant to touch, and that it is important to get the feel of the actual bow stick. However, a non-slip tape was thought to be helpful.

2. From the start, the student should be coached in both the horizontal and vertical motions of the bow. The sound and feel of large bowing motions across the strings should be broadly developed before dealing with various bow strokes.

Discussion of Records:

Some of the tapes recently made were played and the virtues of making records from them were widely discussed. Although constant or frequent listening is often recommended, some participants felt that the teachers should avoid having children use records as background for play or mealtime, lest they forget to listen. This issue was debated and the following suggestions were made:

1. Parental guidance is necessary to make certain the children use the records when they practice.

2. The records should present each tune twice, alternating loud and soft, or perhaps pizzicato and arco.

3. The records should begin with a wide tuning band. Arco tuning is more accurate than pizzicato.

4. Stop-time records could be valuable, such as the old tap dance style of music. The student would continue playing during the gap in sound on the records.

Discussion of Teaching Methods:

1. The value of allowing children to play tunes is undeniable. The necessary beginning skills should be taught as quickly as possible in order to move on to literature. The need for the skills will soon become apparent as they are met in the literature, and then it will seem quite logical to the child that these skills need to be practiced.
2. As a beginning impetus for interest, legato tunes should be introduced early.
3. The Project should contribute radically new materials and procedures for string teachers.
4. The term "keep the fingers down" is to be remembered since children so often let the fingers pop up immediately when this is not desired.

Suggested New Materials:

1. A much greater emphasis on rhythm should take place at a very early stage of training than is customary.
2. All materials should have a teacher's guide.
3. Students need to learn how to practice alone. Tapes and records will expedite this and add-a-part records may be helpful. Even the recording of the second part of duets could be included.

Fourth Meeting, November 21, 1966, 7:30 p.m.

The Project Director introduced Margaret Farish, who explained the Contemporary Music Project, a Small Project Grant of which she was the Principal Investigator. In this project,contemporary music for elementary ensembles was commissioned. Composers were asked to follow the suggestions in Mrs. Farish's "Composers Guide for Writing Violin Music for Children." William Muller, graduate student in composition, wrote the first experimental pieces. Later, well-known composers were commissioned. These materials were used in the String Research Project.

A general discussion followed Mrs. Farish's presentation. Subjects covered earlier in the day were again discussed. The use of percussion instruments in the proposed recordings was suggested. Strong objections were voiced against the use of the xylophone in the records, since this instrument is not conducive to the sustained string sound to be encouraged.

It was observed that the playing and recognition of dissonant intervals is very important in training the child to accept contemporary music.

Fifth meeting, November 22, 9:00 a.m.

The unedited version of the Project film "Remedial Teaching" and the Kató Havas film were shown.

Discussion of Project materials:

1. The Project should relate to big city schools and produce materials that could be shown on closed circuit television.
2. Films should be made available for either purchase or rental.
3. Many short films, each covering a particular problem, would be better than a few longer ones. Since the films will be shown in public schools, they must not be too long.
4. Films should have some Black subjects.
5. Arrows could be used to focus the viewer's attention.
6. The films should present the material in such a way that the student, as well as the teacher, will understand.
7. Is there a possibility of using more difficult and higher class music in the films than just sample tunes?
8. Artists should appear in the films. If possible, shots should be borrowed from the Bell Telephone Company.
9. Black and white could be mixed with color.
10. Films and tapes should be general enough so that a method book is not needed, or designed for use with any method book. A method could be worked out by the Project Director and used if he wishes in the Project, but it should not be published as part of the Project.

Discussion of the Kató Havas film:

The consultants liked the excellent photography of the film. They suggested that the Project make the film available when requested and include it in a bibliography in the Final Report.

However, the consultants observed that the narration and demonstrations were sometimes contradictory and that certain aspects of the film (for example, the lecture approach and the left and right hand motions demonstrated) differed from the proposed Project film format and principles. Therefore, the consultants suggested that the film should not be distributed as part of the series of Project films. They also advised the Project staff to have the runner of the film re-edited to avoid the impression of endorsement.

Sixth meeting, November 22, 1966, 2:30 p.m.

At the final meeting the consultants were asked to summarize the suggestions and ideas resulting from the previous sessions. The following points were made:

1. The Project should not be as concerned with materials as with motion studies, its ultimate aim.
2. Do not produce method books.
3. Limit all films to 10 minutes with a 5 to 8 minute length being the ideal.
4. Aim for single focus in each film.
5. Concentrate on the visual.
6. Gear films for both teachers and students.
7. Films should contain some examples of manual assistance.
8. Include elements of improvisation.
9. Film subjects should look enthusiastic and animated.
10. Students should take part in the films. (Avoid the lecture approach.)
11. Stress tone production.
12. Consider a specific action vocabulary. (General reaction was to use the same type of vocabulary as in the film "Remedial Teaching.")
13. Sitting position should also be presented in the films.

Joint Report of Consultants Following the Above Meeting

1. We accept the premise as established in the agenda concerning films and records and eliminate the student manual.
2. We are far more concerned with concepts and skills than with materials. We need procedures to achieve improved body movement and body coordination. The materials are merely a means for that end. Motion study for children who play the violin is the ultimate aim.
3. Films should be limited to ten minutes, with 5-8 minutes being the ideal. Try to limit each film to a single focus which might include related ideas.

4. Ideas with minimum illustrations and suggested procedures. Explanation of what is occurring in the film. What they seek to achieve.

5. We have eliminated the student manual to concentrate on the visual emphasis for students.

6. We think we have to gear the films for students and teachers in view of the proposal.

7. We think the approach should stand on its own unique merits and be applicable to any method. It should supercede a method or teacher.

8. Valid musical examples should be included as early as possible.

9. It is not our responsibility to evaluate methods for use in the Project.

10. The selection of musical materials is the Project Director's responsibility. The method book should not be a prime necessity. This is a secondary product. The teachers manual should emphasize that the ideas are applicable to any string class regardless of materials.

11. It is suggested that the films contain some examples of "manual assistance" in teaching strings. Elements of improvisation should be somehow included to stimulate creative responses. The "vertical motion" movement, to feel all four strings, suggested by Mr. Totenberg should be included. Do not overlook inclusion of representatives of different ethnic groups.

Post-Conference Comments

Two written reports were sent to the Project Director following the conference. These are summarized below:

Digest of comments by Margaret Farish:

Plans for films are excellent. They should be shown to both teachers and students. Whenever possible, narration should be written in language that children can understand but, if a choice must be made, the needs of the teacher should receive priority. Little can be accomplished unless the teacher understands the principles and techniques involved. If verbal explanations are not clear to children, the teacher can put them in suitable terms. In any case, young children will be primarily interested in seeing and hearing violin playing and are unlikely to pay close attention to the narration.

It is not desirable to separate the physical actions of violin playing from their musical applications.

The films will be more meaningful if motion techniques are related to highly attractive music. Children playing easy studies and tunes should be the primary subjects, but a few seconds might be devoted to the application of these skills to advanced performance.

Manuals for teachers and for students are necessary. The purpose of the Project is not to demonstrate but "to produce" tension-free movements. To accomplish this, it is necessary to provide a means as well as a goal. I am not disturbed by the possibility of producing another method. I would be far more concerned if we did not offer concrete assistance to teachers. Once a teacher understands the essential steps in freeing the violinist by means of action studies, he can use any materials he wishes, but I do not see how this can be made clear without the provision of some written material. The inexperienced teacher must have specific directions. The experienced teacher will look upon the manuals as examples of possibilities and will use them in many ways.

Digest of comments by Howard M. Van Sickle:

Progress bulletins are welcomed and helpful and should be continued to encourage feedback from the onsultant and advisory groups.

Before any manuals, guides, etc., are printed they should be submitted in rough form to the consultant board and possibly to the advisory board for reaction and approval.

Unless the incentive is strong, teachers and students will tend to avoid the work of setting up or operating complicated equipment. (Some people won't answer letters if they have to lick a stamp.) All planning should take into account the newer magazine operating machines for the moving visuals as well as the taped sound track. The capacity of cartridge movie units should partly determine the length of the instructional segment.

In order to assist the viewer in attending to the problem, shortly exposed arrow heads are recommended to point out problem spots in the motion picture.

Try to determine the nature of the faults requiring remedial help and determine the prevalence of the fault so that presentations can be placed in order from the most prevalent to the least.

Plan in advance to develop related materials into kits to include films, tapes, and instructional manuals for teachers and kits with fewer items for students. Manufacturers of game kits might be consulted in this regard.

One of the newer trends in textbook publishing is the marketing of books by chapter units. Students are provided with a list of chapters essential to a course and these can be purchased separately and bound together for convenience. Tapes should have instructions included in package. If records are used, the album cover can be used to present instructions for use. Some instructions could appear on labels. When children handle materials, unconnected instructions can easily be misplaced. Keep it simple.

Design instruction manual with pages that can be removed to make 3M transparencies for class use. Fold pocket into the back of the manual to hold transparencies.

Communications to Consultants Following the Conference

The digest of the meetings was mailed to the consultants. Further comments were solicited in a letter from the Project Director, a summary of which follows.

Dear Friends:

Enclosed is a digest of the Consultants Meetings. Your guidance and follow-up letters have been greatly appreciated.

In summarizing your valuable suggestions, the following comments seem pertinent.

I admit that some difficulty existed in my planning in keeping the Project objectives separate from any personal choice of materials and methods. In fact, the problem of materials to be used during the testing period was of greater concern to me than the various aspects of violin motion research,which by the time of the conference were quite clear to me. For this reason, statements related to teaching materials kept popping up and these were evidently of little interest to the group.

I will follow your recommendations and will conduct the Project along the following lines:

I. FILMS

The films will be short and fairly uniform in length with the possible exception of remedial films which will be geared more to teacher audiences. The content of the films will be geared to teacher information, yet with appeal to young audiences. The recommendations concerning details such as using some Black children, lively, animated subject, good photography, and some good musical performance interspersed with the playing of students will be observed.

The films will not be geared for use with any one method and will deal with the elements of movements and motion techniques whichare applicable regardless of materials used. We shall encourage the use of method books preferred by the individual teachers.

I find it impossible, however, to structure the films without using my personal teaching experience, beliefs, and approach. One of the purposes of the proposal is to exploit further my "Action Studies" in a developmental situation. I have used these in remedial situations for many years.

II. PRINTED MATERIALS

Following your suggestions, we will not provide a student manual as part of the research. The pages given to you and envisioned as a student manual were developed prior to the beginning of the Project (and will not be imposed as a requirement).

Any teacher wishing to use his own materials or those supplied by the Project in conjunction with the "Action Studies" will be free to do so. However, the content of the "Action Studies" should be delivered to the student in some tangible form. We shall provide a Teachers Manual presenting the ideas in the same sequence as the film. The teacher should relay this information to the student by rote teaching or by writing out his own materials. If you feel the Project should prepare additional materials for improved effectiveness of the films, please advise.

III. RECORDINGS

It was the concensus of the meeting that recordings should be produced to aid students in the learning process. These will be selected compositions of grade 1-3 difficulty already in print, and the recordings will be done by Endre Granat and me. In addition, we shall record a number of tunes in the public domain which could be studied by rote or obtained from various publishers. "Add-a-part" records will be made if time and finances permit.

Once again, many thanks for your ideas and help. Your suggestions have given a better perspective to the Project and are always greatly appreciated.

Consultations with Ivan Galamian

Ivan Galamian was visited on December 3 and 4, 1966. Mr. Galamian's reputation as a master teacher of artist students and teachers served as qualification to appraise the principles on which the Project is built.

Mr. Galamian believes that naturalness is the most important element in string playing. He believes that there should be no exaggerated positions, stiff joints, or extreme positions in any of the joints. He concurred with the principle of slight movement in the body during playing. He thought that the exploratory shifting exercises such as the "Shuttle" and the tapping through the various positions were good exercises and favored their early introduction. He agreed that intensive use of left hand pizzicato is an excellent device to shape the beginner's left hand and position.

He approved of the Early Bow Hold and agreed that lightening the load of the bow hold initially would encourage the student to use freer movements than is usually the case.

He thought that it was a good idea to provide recorded musical background for early bowing exercises on open strings for musical motivation.

He concurred that it is fallacious to restrict the student to the first position for a long time.

He agreed with the principle of inward arching of the strokes and also approved of accentuating this tendency by changing the tilt of the violin, flattening it as the tip is approached and tilting it more when approaching the frog.

He agreed with the Director's ideas of coordination between the upper arm, forearm, and hand in the basic movements. Mr. Galamian's demonstration of the basic détaché and spiccato movements was exactly in line with the description in the manuals. His bow arm has the delicate balance resulting from the inclusion of rotary arm movements; the forearm and upper arm movements are always present in correct proportion. In down-bows, as his forearm swings forward, his upper arm participates with a slight upward rotating motion; in up-bows the opposite is true. The balancing of the two main limbs lends to the elbow a free, buoyant quality and the appearance of effortlessness, as if all movements would come about by themselves.

After several hours of discussion and demonstration of the techniques critical to the Project, Mr. Galamian indicated that the elements were basically correct. He found the Project Director's playing correct in all of these elements.

Mr. Galamian was interested in seeing the films and encouraged the showing of these at Meadowmount during the following summer. These were viewed by Mr. Galamian and a number of his teaching associates and students during the summer of 1967. Mr. Galamian and others commented favorably.

Mr. Galamian's teaching was observed for two days and nothing seemed contradictory to the principles involved in the Project. In the presence of Dr. Colwell, discussions were held concerning a summer institute at Meadowmount to be taught by the Project Director. This appeared to be an excellent and challenging idea and was favored by Mr. Galamian. However, Mr. Branigan, Director, School of Music, University of Illinois, did not approve and recommended that Dr. Colwell and Professor Rolland complete the current Project before accepting new duties.

Early in 1968 Mr. Galamian's opinion concerning matters pertaining to the left hand was again sought. He affirmed the Project Director's opinion concerning the desirability of a curved little finger whenever possible. If the hand is deformed, curving of the little finger may not be possible. However, a straight little finger should be the exception rather than the rule.

Second Conference with Consultants
June 8-9, 1968

A second conference of consultants took place after the conclusion of the first year trial teaching (one week following the Wilmette evaluation festival).

Those present were Margaret Farish, Marjorie Keller, Robert Klotman, Marvin Rabin, and Howard M. Van Sickle. Jack Pernecky asked to be relieved from his post because of the pressing duties of his new position as Assistant Dean at Northwestern University. The local staff was represented by Don Miller, Paul Rolland, and Thomas Wisniewski. Richard Colwell was absent because of military obligations in Springfield.

Five meetings were held for a total of ten and a half hours.

First Meeting, June 8, 1969, 9:00 a.m.

At the first session video tapes were shown, presenting the local pupils at various stages of study: after four, twelve, and eighteen weeks of study. Video tapes of the first-year Wilmette demonstration were also presented.

A discussion of the manuals followed. Their shortcomings and their effects on the state-wide teaching were noted. For instance, the stance was not much better in several of the out of town centers than in typical public school classes. This was in marked contrast to the local classes and some of the best classes of the state-wide trial. Reasons for weaknesses in the teaching were investigated. In some instances, they were linked to weaknesses in the manuals, in other cases to lack of emphasis on the part of the teachers or films.

Another weakness was the poor finger placement in the first position, in spite of the emphasis in the early manuals and films on careful preparation of left hand form through exercises in the middle positions.

It was resolved that the contents of the manuals should be examined from the point of view of how it relates to "playing the violin without excessive tension." Unnecessary and irrelevant aspects should be eliminated.

Second Meeting, June 8, 1968, 2:00 p.m.

During the second session the local Project class demonstrated principles and actions to be incorporated in the films in preparation: "Basic Shifting Movements," "First Steps in Vibrato Teaching," and "Sustained Strokes, Détaché, and Related Bowings." It was explained that these films would complete the "Action Study" teaching series, with the exception of a general introductory film which would show the local classes in the final stages of instruction.

The general contents of the proposed films were approved, and the suggestions and impressions received from the ensuing discussions were considered and incorporated into the films.

The local Project class was highly praised for their live performance as well as their participation in the latest completed films: "Establishing Left Hand and Finger Placement in the First Position," "Bouncing the Bow," and "Extending the Bow Stroke," Parts I and II.

During the discussion of these films, one of the consultants objected to the use of students of various ages in Part II of "Extending the Bow Stroke" and suggested a revision. However, this film was well-liked at all public showings and was not changed.

Third Meeting, June 8, 1968, 7:30 p.m.

Evaluation procedures and tools were discussed during the third session.

The consultants noted that several of the films could not be evaluated properly because of delays in production (mainly caused by the fire in the University of Illinois Motion Picture Service). They also noted that the cooperating teachers were not able to survey the entire course because not all materials of the Project were available during the first-year. Therefore, it was agreed that new classes would be started in the state during the school year 1968-69.

Some of the consultants also recommended that these new classes be compared with non-Project classes taught by the same teachers. However, it was obvious that it would be difficult for a teacher indoctrinated in the principles and techniques of the Project to teach a parallel group without using the Project ideas. Therefore, it was suggested that the new Project classes be compared with non-Project classes of other teachers, the best in the state. This recommendation was accepted, although contradictory to the original premise that films and other products would be self-evaluating. The comparison of Project and non-Project classes is discussed in Chapter Eleven.

Fourth Meeting, June 9, 1968, 10:00-12:30 a.m.

During the fourth session the first drill record was played and accepted. This record and the accompanying guide are designed to help the pupil learn basic bowing and fingering patterns. They also pave the way to the first tune record.

A report prepared by Ruth Lasley was read. The comments of Miss Lasley, prominent Dallas teacher who used Project materials in a number of her classes in Dallas schools, were very helpful. (The report is summarized in Chapter Eleven.)

Fifth Meeting, June 9, 1968, 2:00-3:00 p.m.

The fifth session was devoted to additional discussions of the films and teachers manuals.

First Conference with Cooperating Teachers
May 26-28, 1967

The purpose of this meeting was to acquaint the cooperating teachers with the goals and principles of the Project and to advise them concerning the use and testing of the materials and organization of classes scheduled to begin during the fall of 1967.

The following teachers were invited to participate in the meeting:

Richard Casper	Peoria, Illinois
Lawrence Christiansen	Elgin, Illinois
Bonzie Gilbert	Bloomington, Illinois
Milton Goldberg	Winnetka, Illinois
Deane Hauser	Elmhurst, Illinois
Sister Jacquelyn Hoffman, S. P.	Wilmette, Illinois
Lowell Kuntz	Normal, Illinois
Don Langellier	Quincy, Illinois
Ruth Lasley	Dallas, Texas
James Paulding	Macomb, Illinois
Wayne Pyle	Quincy, Illinois
Ann Robert	Peoria, Illinois
Marylyn Sexton	Lombard, Illinois
Jerald Slavich	Champaign, Illinois
George Teufel	Elmhurst, Illinois
Norman Werner	Decatur, Illinois
Edward Wilcox	Champaign, Illinois

It was not expected that all of these teachers would join the program. Therefore, the large participation was encouraged to allow for a reasonable number of Project centers for the trial teaching.

The Project was represented by Paul Rolland, Richard Colwell, Donald Miller, and Kelvin Masson. The sessions were held at the University's Illini Union.

First Meeting, May 26, 1967, 7:30 p.m.

The Project Director explained that the essential elements of the Project were the films and manuals (which explain in detail how to establish the basic techniques and how to avoid excessive tensions in string playing) and that the other products of the Project such as the records and their music and note reading guides were optional features. During the following discussion some of the teachers tried the ideas and movements to be used in the teaching.

Second Meeting, May 27, 1967, 9:00 a.m.

Demonstration and discussion of Project techniques continued. The teachers viewed and discussed the film "Remedial Teaching," which had been prepared during the previous summer.

Third Meeting, May 27, 1967, 2:00 p.m.

The film "The Teaching of Katò Havas," showing the principles of this successful London teacher, was shown. The similarities between Miss Havas' ideas and methods and those of the Project Director were discussed.

Fourth Meeting, May 27, 1967, 7:30 p.m.

Work prints of the films: "Establishing the Violin Hold," "Learning to Hold the Bow," and "Playing at the Middle" were shown, thus preparing the teachers for the first stages of the trial teaching.

Fifth Meeting, May 28, 1967, 9:30 a.m.

Since the fire in the Motion Picture Service in December, 1966 had caused lengthy delays in the completion of the later films, the more advanced stages of instruction were demonstrated by the Project Director and three of his private students: Alice and Melanie Cognetta, and Danny Foster.

The conference ended officially following the fifth meeting but a number of the teachers stayed to observe an outdoor filming session, in which a large group of college students were photographed for scenes in Part II of "Extending the Bow Stroke."

Second Conference with Cooperating Teachers
February 10-11, 1968

The second conference was held at the conclusion of four months of trial teaching. It was attended by the following:

Richard Casper	Peoria, Illinois
Lawrence Christiansen	Elgin, Illinois
Bonzie Gilbert	Bloomington, Illinois
Deanne Hauser	Elmhurst, Illinois
Sister Jacquelyn Hoffman, S. P.	Wilmette, Illinois
Lowell Kuntz	Normal, Illinois
Don Langellier	Quincy, Illinois
Wayne Pyle	Quincy, Illinois
Ann Robert	Peoria, Illinois
Marylyn Sexton	Lombard, Illinois
Jerald Slavich	Champaign, Illinois
George Teufel	Elmhurst, Illinois
David Ulfeng	Charleston, Illinois
Norman Werner	Decatur, Illinois
Edward Wilcox	Champaign, Illinois

The Project staff was represented by Margaret Farish, Donald Miller, Paul Rolland, and Thomas Wisniewski.

First Meeting, February 10, 1968, 5:00 p.m.

Students from the Urbana "Advanced Class" (described in Chapter Eight) demonstrated techniques on the yet unavailable Project films: "Extending the Bow Stroke" and "Bouncing the Bow." A video tape of the introduction of bouncing bows to the local classes was shown.

Second Meeting, February 10, 1968, 8:00 p.m.

Each of the cooperating teachers presented a report.

A video kinescope and a video tape were shown of the programs of the "Advanced Class" at the end of the fourth and twelfth weeks of instruction.

Third Meeting, February 11, 1968, 9:00 a.m.

Two new films, "Establishing Left Hand and Finger Placement in the First Position" and "Rhythm Training," were shown. The topics of the yet unavailable films, "Principles of Left Hand and Finger Action," "Martelé and Staccato," "Developing Finger Movement," "Developing Flexibility," and "First Steps in Vibrato Teaching,"were discussed.

Fourth Meeting, February 11, 1968, 2:00 p.m.

The Project Director explained the principles and teaching procedures in this workshop session, and a number of teachers practiced the various techniques on their instruments.

Problems reported by the teachers and Project assistants (who visited the classes in the state) were discussed and clarified.

Since many teachers were anxious to have a recommended time schedule of the various techniques, a recommended curriculum sequence was presented. This schedule formed the basis of the Suggested Curriculum Guide (Appendix D), which organizes all of the materials into a thirty-two unit sequence.

Third Conference with Cooperating Teachers
September 14-15, 1968

This was the best-attended conference of the trial teaching. Teachers of the proposed new centers joined those who had already taught the materials for one year. Teachers from the proposed new centers were:

Ralph Bowen	Springfield, Illinois
Virginia Campagna	Alton, Illinois
Tanya Carey	Macomb, Illinois
Judith Graham	Morton Grove, Illinois
Thomas Hageman	Wheeling, Illinois
Marlou Johnston	Lincolnwood, Illinois
Nancy Leo	Macomb, Illinois
Paul Meyer	Jacksonville, Illinois
Sister Michelle	Chicago, Illinois
Nora Roll	Chicago, Illinois

Teachers from already established centers were:

Lawrence Christiansen	Elgin, Illinois
Bonzie Gilbert	Bloomington, Illinois
Milton Goldberg	Winnetka, Illinois
Sister Jacquelyn Hoffman, S.P.	Wilmette, Illinois
Wayne Pyle	Quincy, Illinois
Marylyn Sexton	Lombard, Illinois
Jerald Slavich	Champaign, Illinois
George Teufel	Elmhurst, Illinois
Norman Werner	Decatur, Illinois
Edward Wilcox	Champaign, Illinois

The Project staff was represented by Margaret Farish, Donald Miller, and Paul Rolland.

First Meeting, September 14, 1968, 10:30 a.m.

First year procedures, results, and problems were reported and discussed. The reports were most helpful in determining needs to strengthen or revise specific points of the teaching program. These are reported in Chapter Five.

Second Meeting, September 14, 1968, 2:30 p.m.

The discussions continued and the Urbana "Advanced Class" and Project Director presented a brief program and demonstration of techniques to be taught during the second year trial program. The long delayed films, "Principles of Left Hand and Finger Action" and "Rhythm Training," were shown.

Third Meeting, September 14, 1968, 8:00 p.m.

The discussions of techniques related to the first and second years of teaching continued, and the films "Extending the Bow Stroke" and "Martelé and Staccato" were shown.

Fourth Meeting, September 15, 1968, 10:00 a.m.

The Project Director demonstrated and discussed the more advanced techniques. The teachers were invited to practice the Action Studies on their instruments.

Fifth Meeting, September 15, 1968, 3:00 p.m.

The final session was devoted to the new Project teachers. Orientation and discussions were related to the organization and visitation plan of Project classes and the discussion of basic principles and techniques. Some of the early films were projected. Teachers with instruments practiced some of the movements and techniques characteristic to the Project.

CHAPTER EIGHT

THE URBANA-CHAMPAIGN PROGRAM

Introduction

The Project staff organized and taught trial classes in the local public schools. The teaching and observation of local children allowed the staff to gain first-hand experience in applying the principles and materials of the Project. A number of graduate and undergraduate students were initiated into teaching under this program. Graduate assistants visited the various Project centers in the state to report the work in progress.

The status of strings in Urbana-Champaign was, and still is, dissimilar. At the beginning of the trial teaching, fall of 1967, Champaign had a strong program with three full-time string teachers, each a string major. Urbana, on the other hand, had only one string teacher, a wind major whose teaching load was equally divided between band and strings.

Because of this imbalance it seemed advisable to give all possible assistance to the Urbana program while offering the Champaign staff the same opportunity to sponsor trial classes as the other school systems in the state.

The Urbana Program

In May, 1967 the Project announced its intention of starting string classes in the Urbana schools, grades one through four, in June and October, 1967. The result of the questionnaire sent to parents was overwhelming. While the Project had offered to provide instructors for eight classes with approximately sixty pupils, more than twice as many parents indicated interest in the instruction. Of these, over a hundred students materialized. Fifteen enrolled in the summer violin classes; the remainder began instruction in October.

Since the school administration insisted that either all or none of the students be accommodated, the large registration created unexpected problems in staffing the teaching program. Some of the classes, especially those for first and second graders, were extremely large and difficult for the inexperienced instructors to handle. Numerous scheduling and transportation problems had to be solved. The scheduling of classes before and after school hours caused attendance problems, especially during the winter months.

In spite of these problems the Urbana program, with its ultimate development of the fine Project class which performed for numerous national, regional, and state conventions, was one of the most important achievements of the Project. The second- and third-year local class was featured in a number of Project films, both in the performance of new compositions and demonstrations of teaching techniques.

The fifteen children enrolled in the 1967 summer class and their parents were interviewed during the week of July third. The children were measured for instrument sizes and were advised to purchase or rent instruments from the local dealers. The children, who had completed the second or third grade, attended a total of sixteen hour and a half sessions during the four-week program from July tenth to August fourth. Instruction was given by the Project Director; three graduate assistants who were scheduled to continue the instruction during the fall assisted and observed the instruction.

Having received four weeks of instruction during the summer, the chidren were called in late September. After a single review session, they were recorded in a video tape session at the university's television station. The ensuing video tape, "Fourth Week Report," is submitted as part of this Report.

In this report, the children performed rhythmic games, violin placement exercises, simple pizzicato tunes, and bowing exercises on the open strings. They showed unusually well-shaped left hand positions, attributed to the frequent practice of left hand pizzicato on the open strings through the positions ("Shuttle" game). The stance and violin hold of most of the children were well-formed, and most of the children bowed reasonably well at the middle of the bow.

After twelve weeks of study, the same students were recorded in a second video tape in which they played more advanced materials. (Tape submitted with this Report.) The emphasis on rhythmic motion games and exercises continued during classes, these interludes having a salutary effect on class morale.

During the 1967-68 school year, Project assistants taught classes in four Urbana elementary schools. The classes, which started during the first or second week of October, met twice a week for a half hour and varied in size from three to fourteen students. One hundred and seventeen new students enrolled. The children who had begun in July came from two of the schools. In addition to their instruction by Project assistants in their respective schools, they were also taught once a week at the university by the Project Director. The break down of classes was as follows:

	Leal School	Yankee Ridge School	Wiley School	Webber School
First-second grade classes:	33	20	16	7
Third-fourth grade classes:	16	11	8	6
"Advanced" classes:	9	4		

The majority of the children studied violin because of the young age group involved. A cello class of nine third, fourth, and fifth graders was also started.

During fair weather season all of the children and their parents were invited to a Saturday morning "jam session" at the Leal school gymnasium, where two forty-five-minute sessions were held. During these meetings rhythmic games were played, basic principles and homework guides were explained to the parents, and films were shown. Here the parents had the opportunity to meet the teachers and the Project Director, who supervised these meetings and occasionally dropped in to see the week-day classes in progress.

At the conclusion of the year of instruction the parents were asked to comment upon the program. Some of their statements are included in Appendix A. The parents of seventy-seven of the children responded to the following questionnaire:

1. What is your child's attitude toward playing the violin:

    a. Likes it very much--45
    b. Thinks it is all right--30
    c. Shows no feeling towards it--0
    d. Dislikes it--2

2. Does he practice willingly? Yes 60 No 17

3. Do you think your child has benefited from studying the violin this year?

    Very much 48 Quite a bit 26 Some 3 Not at all 0

4. Do you think that his violin study has helped him to appreciate music more?

    Yes 72 No 3 I don't know 2

Periodically, the student teachers met with the Project Director, who outlined the teaching program and discussed the various problems at hand. In addition to the usual problems in the classroom, numerous problems of administration arose. It was extremely difficuly to schedule the many classes because of conflicting university schedules and to arrange transportation for the teaching assistants to and from classes. The same assistants also were required to visit the various out-of-town centers every third week, adding to the scheduling problems.

The first-year trial concluded with a program of all children on May 26, 1968 at the Urbana Junior High School gymnasium. (See Appendix A.) A video tape of this program is submitted as part of this Report.

A scene from the Urbana Final Program, May 28, 1968.

Urbana Project Class at Wilmette Evaluation, June 2, 1968.

Wilmette Evaluation, June 1, 1969. Evaluators: Marvin Rabin (standing), Stanley Nosal, George Perlman, Victor Aitay, Robert Shamo. Also shown: Walter Haderer, guest, Thomas Wisniewski, staff (standing).

The "advanced" class participated in the Wilmette evaluation session on June 2, 1968 (discussed in Chapter Eleven), presenting a brief program. The class also played for the second meeting of the Project consultants, June 8-9, 1968.

During the second year of the statewide trial teaching, a number of new classes were started. Thus, the graduate assistants had to make observation trips and the work loads of the Project assistants had to be reduced. Therefore, the teaching in the four Urbana schools was discontinued, and the children who had started during the previous year were ushered into the regular school programs. The school system appointed an additional string teacher, a position which became permanent owing to the increase in string students.

The "advanced" class continued to meet at the university once or twice a week for an hour of instruction by the Project Director. They were observed by the assistants of the Project. A number of the children who had begun in October, 1967 and had shown outstanding progress joined this group.

During their second year of study, the children in this class performed with much success at the national MENA-ASTA Convention in Cincinnati, the Illinois state ASTA meeting in Edwardsville, and the ASTA North Central Regional Conference in Bloomington.

During their third year, they appeared at the Midwestern Conference at the University of Michigan, the National Convention of MENC-ASTA, and the ASTA North Central Regional Conference in Urbana.

The climax of the children's study was their performance at the White House Conference on Children, Washington, D. C., on December 15, 1970. During their fourth year of study, the class also performed at the MENC North Central Regional Conference in Cincinnati.

The program from the White House Conference and the citations received are presented below. A collection of additional programs by the Urbana-Champaign is included in Appendix A; reviews of these performances and articles about the class are submitted in Appendix B.

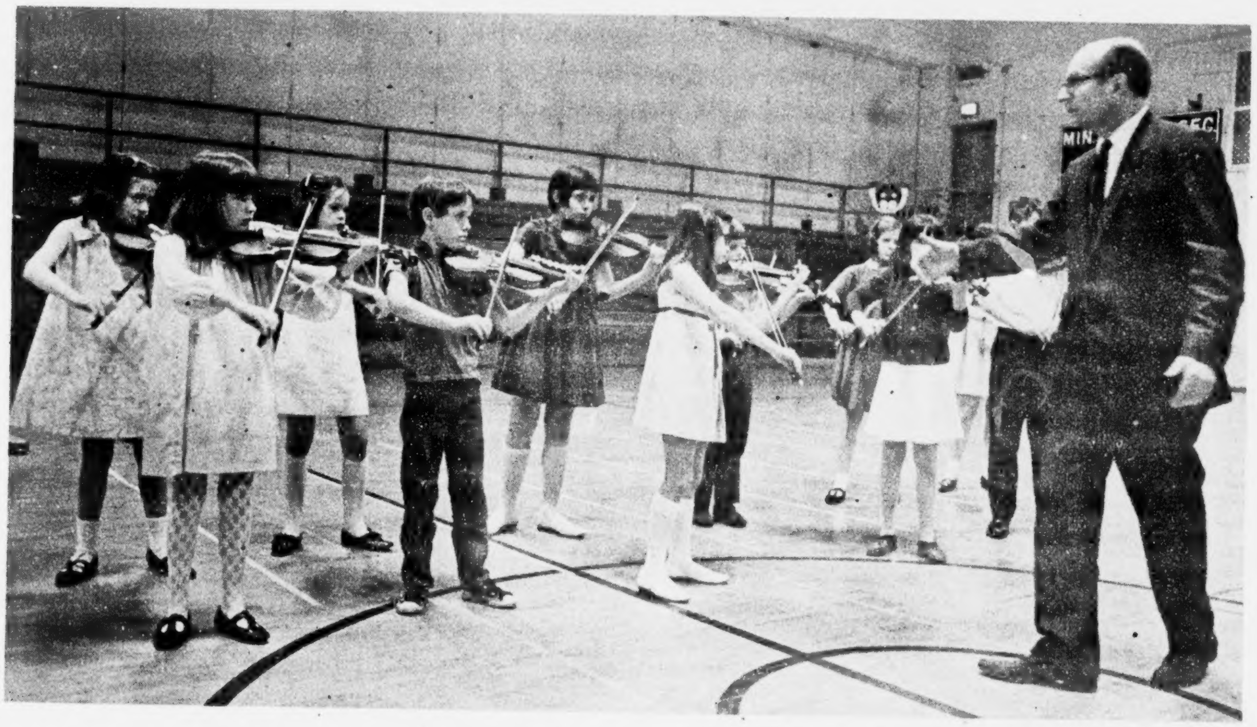
The Urbana program was instrumental in providing trial of the teaching ideas and materials as they were intended. The classes were regularly observed by Project assistants and students of the String Pedagogy course and served as a valuable training opportunity for a number of teacher trainees. Through its programs and public or filmed demonstrations it set standards which can be expected to boost the quality of string instruction in the country.

The Champaign Program

As mentioned above, Champaign, Illinois has had a well-established string program for many years, owing to an administration which has favored and provided for string study. Two experienced string teachers put this program on excellent footing The Champaign instructors provided pupils who appeared in the first films, "Establishing the Violin Hold," "Learning to Hold the Bow," and "Rhythm Training," which were produced before the trial teaching of the Project began.

The Project materials were used extensively in the Champaign program. Two of the classes, designated as "Project Classes," were taught with great success by the two experienced Champaign instructors, whose comments were very helpful in the revising process.

During the third year of trial teaching three Champaign children were accepted into the Urbana "advanced" class to replace children who had moved away. They participated in the demonstrations listed above and in the preparation of the last films produced by the Project late in 1969.



The Urbana-Champaign class at the end of first-year instruction.

THE SOUNDS OF CHILDREN

PRESENTED BY
THE WHITE HOUSE CONFERENCE ON CHILDREN
AND
THE MUSIC EDUCATORS NATIONAL CONFERENCE

Sheraton-Park Hotel--Sheraton Hall
Washington, D. C.
December 15, 1970
8:00 P. M.

PROGRAM BY THE UNIVERSITY OF ILLINOIS STRING RESEARCH PROJECT CLASS

Peter's March . . . . (by permission of Theodore Presser Co.)	Richard Wernick
Concerto in G Major (excerpt)	Vivaldi
Cradle Song	Schubert
Fiddler's Blues, Peasant Dance, Hora. . . . . (by permission of Boosey & Hawkes, Inc.)	Stanley Fletcher

Participating Children: Gwenyth Bailey, Louise Brodie, Ward Deal, Debbie Evans, Cynthia Healy, Lucia Lin, Susan Lo, Andra Patton, Lynn Stenstrom, Sally Tien, David Voigtlander, Heidi Wilcox. Eric Wilcox, Laura Wilcox, Betty Yen, Frances Yen, and Roberta Yoss. The children participating in the program are from the Urbana-Champaign Class (one of many which participated in the testing of Project materials). The children began study during the summer or fall of 1967. Eric Wilcox joined the class this year after the conclusion of the "official" Project instruction.

The Urbana-Champaign class during the final year of the Project.

The 1970 White House Conference on Children

Commends

STRING RESEARCH PROJECT
UNIVERSITY OF ILLINOIS

For contributing to the success of the Conference

Dec. 13-18, 1970

Stephen Hess
National Chairman
1970 White House Conference on Children

music educators national conference

1201 SIXTEENTH STREET NORTHWEST, WASHINGTON, D. C. 20036 (202) 833-4216

December 22, 1970

Mr. Paul Rolland, Project Director
String Research Project
University of Illinois
Urbana, Illinois 61801

Dear Mr. Rolland:

On behalf of the 60,000 members of the Music Educators National Conference, I want to thank you again for your outstanding contribution to "The Sounds of Children" program at the White House Conference on Children last week. Louis Wersen, chairman of the National Planning Committee, joins me in congratulating you for the excellence of the performers you contributed to the program and I trust that you are as gratified as we by the success of the entire evening. Please thank all of the children for the beautiful and touching moments they brought to those of us who were in the audience.

The enclosed certificate is a token of our appreciation. I hope that there will be further opportunities to collaborate with you in advancing the cause of children, music education and dance. In the meanwhile, my sincere wishes for your continued success.

Sincerely,

Fran M. Andrews
Frances M. Andrews
President

Enclosure

FMA:me

CHAPTER NINE

PROJECT EVALUATION BY F. A. HELLEBRANDT, M. D.

The Project received unexpected support when Dr. Hellebrandt, the distinguished biological scientist, expressed an interest in the Project, granted a two-day consultation in August, 1970, and generously agreed to appraise the principles and films of the Project from the standpoint of her discipline.

CONTROL AND REGULATION OF VOLUNTARY MOVEMENT

Application of Newer Knowledge to Violin Pedagogy

F. A. Hellebrandt, M. D.
(Professor Emeritus, University of Wisconsin, formerly Director of the Motor Learning Research Laboratory, Schools of Medicine and Education, Madison, Wisconsin.)

INTRODUCTION

The last decade has been marked by very rapid developments in the neurosciences. These encompass advances in a vast and steadily growing body of information in disparate branches of anatomy, physiology, cybernetics, and the behavioral sciences. To the biological scientist who is also an amateur string player, this newer knowledge seems richly applicable to certain aspects of violin pedagogy. The reason for this is very simple. The violin does not play itself. It is an instrument which must be played. Man alone among living creatures is capable of performing this feat. Unique though the act may be, it is comprised of simple and quite ordinary voluntary movements. The violin is held readily enough between the chin and collar bone so that its strings may be stopped by the fingers of a left hand free to move over the length of the fingerboard. The strings are made to vibrate by contact with a bow drawn with different speeds and attacks by the right arm and hand. The precision, range and variation of the movements responding to the will of the seasoned player are acquired through a process of painstaking perceptual and motor learning. Those of the virtuoso performer appear to flow in a succession of exquisitely timed and effortless sequences that yield a singing tone amenable to limitless diversity in quality and connotation. How is this skill acquired? Through the correct use of inborn bodily mechanisms which control and regulate voluntary movements. There is no other way. Disregard of the natural laws under which the living machine operates brings the same calamitous consequences as the inexpedient use of some man-made machine.

Everyone knows that more goes into the creation of a virtuoso performer than technical skill, but the beautiful renditions of a sensitive artist are impossible without it. The University of Illinois String Research Project has been concerned with how best to teach the skills of violin playing to children of school age through the medium of class instruction. It was initiated because something is amiss in the string teaching of today. This is an undeniable fact. It should not be evaded. "The Teaching of Action in String Playing" is a "cure" for the rectification of some of the most crippling symptoms of this illness. It is fresh, exciting, imaginative, and good. Furthermore, it rests on a sound foundation. No wonder, then, that the principles and practices under investigation at the University of Illinois for the last several years have been so impressively successful. They "work" with beginners and when applied to more advanced players in remedial classes.

The children in the test group filmed are captivating, and perform with freedom and grace. It is a pleasure to watch them work in the demonstration films. The general impression is one of disciplined elegance. The children enjoy what they are doing. Some break through the trend toward stereotyping inevitable in class teaching and show unwitting signs of individual style which are both charming and amusing. Originality is not suppressed. Tone quality and intonation are good. Almost everything is played from memory though the children can and do read music in some of the films. They project well. Their playing has a very real communicative quality. That progress in the mastery of technical details is more rapid than usual is sharply evident to any knowledgeable observer. This may seem to be extravagant praise. However, proof of the excellence of the method resides in the nature and spirit of the performance as captured in a meticulously planned and beautifully photographed series of teaching films. It is demonstrable, and may be assessed by anyone who takes the trouble to study the evidence.

What does Professor Rolland do which is unique? Can the critical variable that is the essence of the University of Illinois String Research Project be isolated? The answer is "yes." The Illinois Project develops and nourishes the fundamental positional substrate obligatory for skilled physical performance. It gives the pupil the type of basic instruction absolutely necessary--general movement education and rhythm training. These are a part of learning how to play the violin and give the Illinois String Research Project its unique quality and title: "The Teaching of Action in String Playing." The specific techniques are superimposed upon this foundation. The significance of this deceivingly simple analysis cannot be understood without knowing considerably more than most violin teachers do about how voluntary movements are controlled and regulated. The diagrams which follow attempt to present a panoramic view of a segment of human knowledge unfamiliar in such technical detail to musicians, but full of an interest abounding in practical implications.

Eight of the twelve charts form the steel and concrete for a family of ideas which permit a new look at violin pedagogics and give it support. For the most part they are what the cyberneticist calls Black Box operations, that is, mechanisms occurring in the awesomely complex workings of the central nervous system. The teacher does not really have to know what is happening in the Black Box. A long and intimate contact with the biological aspects of motor learning suggests that the instructional methods of the truly gifted teacher of any physical skill are invariably in harmony with the wise and prudent operations of Nature. Unfortunately, not every violin teacher is a master of his instrument, brimming with an intuitive know-how that pours forth in a cascade of illuminating instructions. He may require help to bridge the communication gap between his inner understanding and the needs of the student. But what transpires in the Black Box explains why certain end-results, good or bad, are inevitable. The curious pupil likes to know why things happen as they do and the teacher with an inquisitive mind gets sustenance from knowing.In other words, when pedagogics are rooted in a rationale which is defensible it is difficult to imagine inadequacy in its proponents. If something goes wrong and the pupil does not play with the élan of the children in the teaching films, the instructor may have gleaned sufficient information from a study of the diagrams to diagnose the cause of the fault and apply appropriate corrective measures.

Knowing how voluntary movements are controlled and regulated is one way of checking on the validity of the tenets to which the teacher subscribes. It is high time that these be exposed to critical evaluation. The charts are intended to give a general idea of how perceptual and motor skills are acquired. Examine each one, read the accompanying legend, and then study the chart again. It may take more than one reading to get the gist of the idea. The language may be strange but it is not unintelligible in the sophisticated, late 20th century scientific age to which even musicians belong. They have a private language too, which the nonprofessional student of the violin gladly learns so as to be able to understand the classical and contemporary literature pertinent to his instrument.

No more is really needed than the core concept of each cluster of ideas. The first diagram sums up the whole story. Read it both vertically and horizontally. It is a preview of what follows. It might be well to re-examine this figure when moving from step to step, if the going seems hard. The succeeding material is presented in a roughly historical sequence. Many things have been left unsaid in an effort to achieve simplicity. Early and naive concepts are replaced by schemata which grow in complexity from one chart to the next. If studied carefully, the series of interrelated facts will fall into place ultimately and give a reasonably coherent picture of the bare bones of what must be known if motor skills are to be taught intelligently.

The teacher may be disturbed at first by the realization that much of what happens is automatic when a goal-directed physical act is implemented--like bouncing the bow, martelé, or staccato. It will take all the skill he can muster to create the physiological and biomechanical climate obligatory for the learning of such specific techniques. Professor Rolland has demonstrated convincingly that the substrate for these is comprised of simple, natural movements that spring more or less spontaneously from the inborn repertoire, or movement vocabulary common to all normal individuals. They require little learning. Before these ideas can be grasped and appreciated something needs to be said about the circuitry or design of the great efferent (motor) channels that beam command signals to the voluntary muscles.

The control of voluntary movement implicates two motor systems, one corticospinal (conscious control) and the other subcorticospinal (unconscious control). In the diagrams they are referred to as pyramidal and extrapyramidal, which is a somewhat old fashioned terminology. Very recent work suggests that the extrapyramidal system is made up of two parts. One of these is absolutely basic. It has to do with the control of posture, the poise of the head and position of the neck, and the disposition of the girdles and proximal limb joints. These parts work as integrated "wholes" which give stability to the stance and bestow the exact degree of limb fixation necessary to permit the discrete activities of distal parts, especially those of the thumb, hand and the fingers. These controls are subcortical. They require no direction by the mind. They operate automatically. Superimposed upon the basic subcorticospinal system is another spontaneous regulatory device that controls total limb synergies which are yoked irrevocably to general postural adjustments. It also permits limited independence in the action of the hand. However, neither of these two involuntary motor channels can exert any significant power over the initiation of discrete skills executed by the most peripheral parts of the appendages, that is, the wrist, hand and fingers. This is the function of the great corticospinal tract which is an express route that runs without stopping from the highest levels of the central nervous system to the final common paths chosen to activate specific muscle groups. One does not have to be a neurophysiologist to understand that this important command system would be valueless without the continuous and unremitting support of the two great subcortical outputs.

These are exciting new ideas that shed light on some of the most common and most difficult problems with which the violin teacher contends. Clutching the bow stiffens the whole bowing arm. Gripping the neck of the violin immobilizes the left hand. Supporting the violin with the left shoulder limits the mobility of the whole left arm. It is virtually impossible to imagine how a young student with a fluid postural balance, proper head poise, correct violin hold, and good proximal (shoulder) joint control could encounter serious learning difficulties when attempting to execute the discrete and specific technical skills of violin playing. The films strongly suggest that as long as the substrate is mobile, motor learning per se will be expedited.

What Professor Rolland appears to have done is to make general movement education, rhythm training, and the art of maintaining a dynamic postural balance integral components of violin teaching. Exercises devised to develop freely flowing movement patterns precede the teaching of each standard group of specific technical skills. Because these are composed of simple natural movements they are easily learned. Facilitated by the use of new music composed specifically to augment performance, the patterns soon evolve without any trace of restraint. They appear in the films to be effortless. In the best of the pupils in the demonstration class they run their course with enviable natural grace. The patterns developed so effectively by Rolland, are overwhelmingly the product of automatic subcortical organization, surveillance and regulation.

Rhythm and movement training also arouses primitive affective states present in all mankind. This leads to so-called "organic playing." The motivational drive comes from "inside" in association with the operation of natural visceral processes controlled by the autonomic nervous system. These might well be called "gut responses." The Illinois String Research Project treats on a high educational and cultural level the powerful impulses behind folk music, gypsy playing, rock and other forms that attract thousands to great festivals. Much of its teaching materials are contemporary. It moulds their use in ways which open the door to the attainment of the self-same skills necessary for the enjoyment of classical musical experiences.

The bulk of the instructional material in the teaching manuals is concerned with how to perform the various violin techniques. End-results are described frequently in considerable detail and common errors are noted. Here the approach is quite traditional and will be understood easily by the teacher with an orthodox training. It is well to remember that volitional acts always begin with a conceptual frame of reference. Perhaps too little attention has been devoted by the teacher to the task of making the end-result clear. The highest centers of the brain, which are located in the cortex of the cerebrum, initiate all voluntary movements. They issue the command, but the act is organized and programmed subcortically. A bewildering network of controls, most of which are self-regulatory, compare intended with actual performance and automatically make what adjustments are indicated. Close and detailed conscious direction is obligatory only during the initial stages of motor learning. Bonpensiere calls this physio-kinetic control. It should never be used longer than absolutely necessary. Many teachers err in this respect. It is the habituation of a skill which should be expedited. As soon as this is accomplished, conscious direction is no longer needed and playing becomes essentially ideo-kinetic. A little thoughtful self-exploration by the teacher will demonstrate dramatically and unequivocally that the conscious direction of any physical act which the wisdom of Nature permits one to perform automatically, greatly distorts the flow of the movement and makes the end-result almost unrecognizable. It virtually wrecks the operation of the machine. Try instructing the limbs in the details of what to do in executing a simple normal gait with upper and lower extremities moving smoothly in opposition. Then try the same experiment on some well learned technical skill associated with violin playing.

In the diagrams the conscious direction of volitional acts is called a "machine-for-playing-the-violin." When the substrate is sensitively mobile and the specific skills so well learned that they run their course automatically, the living body becomes a "machine-for-making-music," with the resources of its highest control centers left free to embellish the musical ideas being implemented.

The last four diagrams of the series presented suggest that contemporary trends in instrumental teaching are moving away from certain of the rigidities characteristic of late 19th and early 20th century methods.

These had been allowed to become excessively dogmatic and hence self-limiting, no doubt defeating what may have been an admirable original intent through a succession of modifications based more on personal idiosyncrasies than reason. In these diagrams the struggle to understand why certain rules should be followed is swept aside and an attempt is made to explain with frankly physiological concepts the new gropings of an interesting constellation of modern pedagogues seeking better methods of teaching the physical skills associated with music making. The elucidation of these in biological terms adds luster to the contributions being made, at least to the scientist interested in string playing. It is hoped that the teacher readying himself to partake of the fruits of the University of Illinois String Research Project will be helped by this effort to look beneath the surface of an attractive and practical instruction method at the beauty of the physiological mechanisms which seem to be responsible for its success.

CONTROL AND REGULATION OF VOLUNTARY MOVEMENT

DIAGRAMS

Fig. 1: Anatomico-Physiological Orientation - The pupil is confronted with an etude affording an opportunity to perfect some technical skill calling for a particular movement pattern. The cortex of the cerebrum alone has the power to conceive the intent of the study and the manner of its execution. The teacher must make the idea vividly clear to the pupil. The general plan for the achievement of the end-result desired is organized subcortically. This process is beyond the volitional control of either the teacher or the pupil. Learned movements normally proceed without conscious direction. The cerebrum only initiates the act and provides variable degrees of surveillance. It observes, or is aware of what happens, without necessarily directing the course of events. However, the highest centers in an hierarchical control system can always over-ride lower regulatory mechanisms. Thus, the cerebrum may or may not choose to control the details of the operation. The teacher greatly influences the rate at which the specific conscious direction of physical acts being practiced is relinquished. Skills then evolve automatically and the "machine-for-playing-the-violin" becomes a "machine-for-making-music." Musical ideas replace technical directives. The student is preoccupied with one or the other of these objectives. The machinery of the living body cannot attend to both simultaneously. In rote learning, practice is mechanical and the cortex contributes nothing other than executive orders.

ANATOMICO-PHYSIOLOGICAL ORIENTATION

PREVIEW of HIERARCHICAL LEVELS OF OPERATION

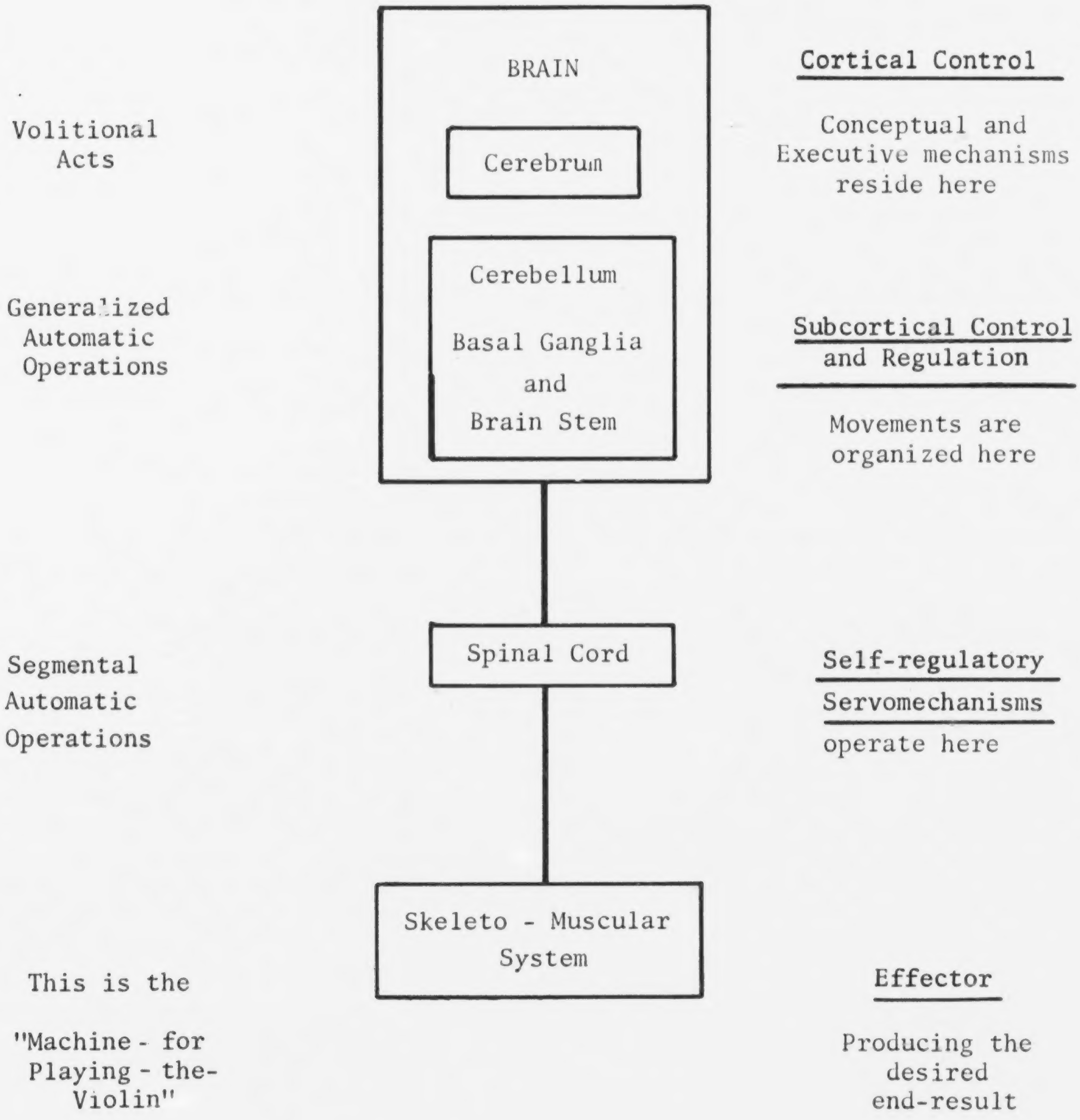
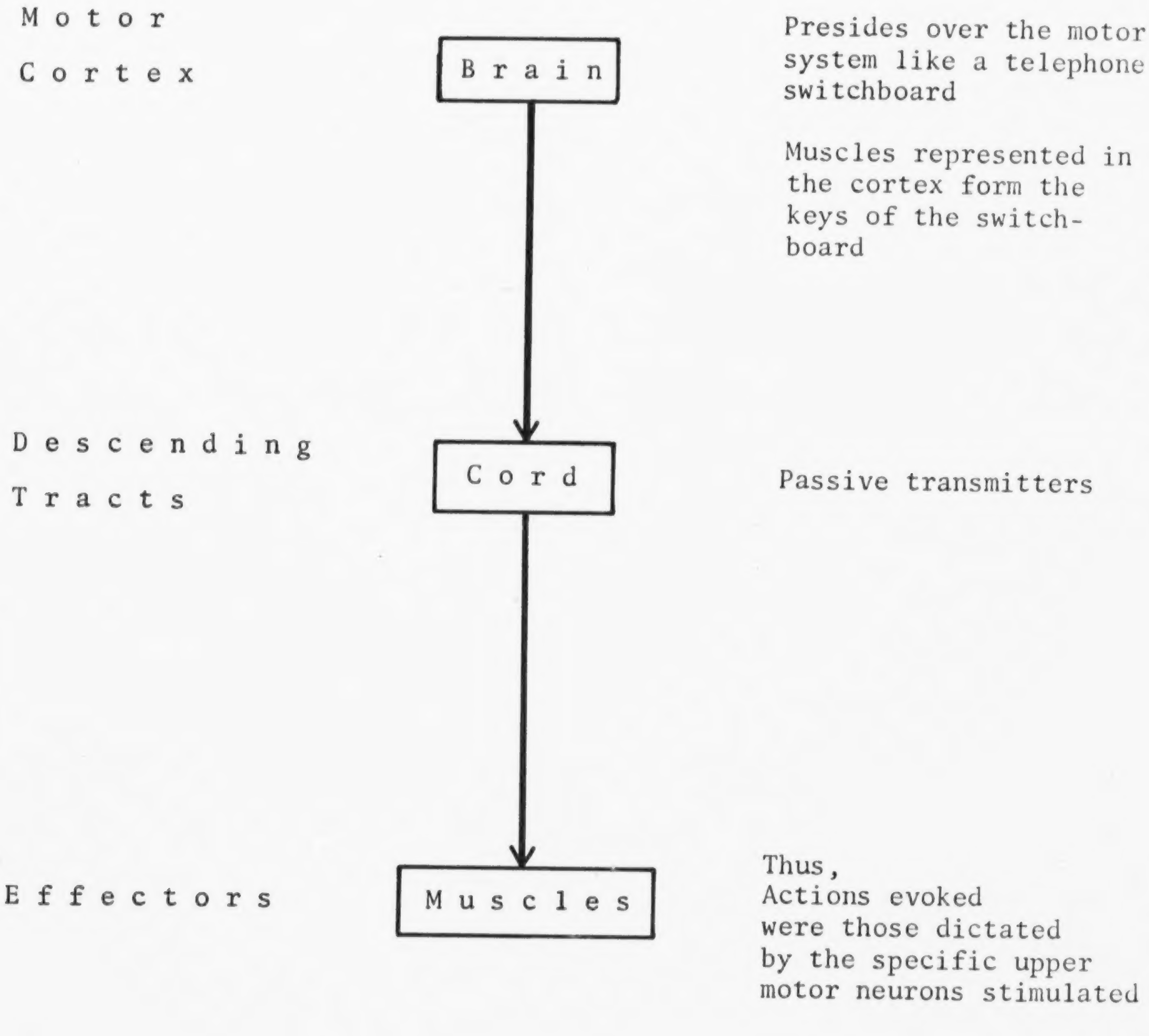

BRAIN
Cerebrum
Cerebellum
Basal Ganglia and Brain Stem
Spinal Cord
Skeleto - Muscular System
Volitional Acts
Generalized Automatic Operations
Segmental Automatic Operations
This is the "Machine - for Playing - the- Violin"
Cortical Control
Conceptual and Executive mechanisms reside here
Subcortical Control and Regulation
Movements are organized here
Self-regulatory Servomechanisms operate here
Effector
Producing the desired end-result

Figure 1

Fig. 2: Early Simplistic Concepts - This is a pure output system of a brain looked upon as a Black Box, that is, a center whose operations are too complex to be understood. It assumes that muscles per se are represented in the cortex in an arrangement like a switchboard. Punch the right key to get the right response. The model does not explain how groups of muscles involved in the execution of skilled movements are integrated into coordinated wholes. Nor does it explain how responses can be modulated with such astonishing precision to fit the continuously varying needs of activities like violin playing. Are individual muscles really represented in the cortex? Yes, they are. But does the living machine depend on the voluntary selection of these and the conscious aggregation of individual muscles into the enormously complex constellations which comprise coordinated movements? Obviously not. No practical system of violin pedagogy has ever been built on knowing the specific muscle actions which contribute to technical proficiency. The simplistic model leaves many important questions unanswered.

EARLY SIMPLISTIC CONCEPTS OF MOVEMENT CONTROL


Motor Cortex
Brain
Descending Tracts
Cord
Effectors
Muscles

Presides over the motor system like a telephone switchboard

Muscles represented in the cortex form the keys of the switchboard

Passive transmitters

Thus,
Actions evoked were those dictated by the specific upper motor neurons stimulated

Figure 2

Fig. 5: *Broadening the Conceptual Framework* - Many physiologists believe that movements are represented in the cortex, not muscles. Manipulative skills appear to be initiated in toto cortically. Their direction may or may not be conscious. They are organized subcortically and accompanied by positional events or involuntary associated movements which always evolve below the level of consciousness. Natural movements are patterned. Those of the appendages are total limb synergies. Each segment of the multijointed extremity is adjusted precisely to the activity of every other and the whole is an integral part of a still larger unit. *Concentrating volitional control on some isolated segment, like the wrist or fingers, provides a training which may have little to do with what is required of the part when it operates naturally*. The living machine may even be incapable of behaving as the teacher orders. Built-in patterns of coordination tend always to supercede contrived manipulations. More is involved in the physical aspect of violin playing than stopping the string and drawing the bow. Parts far removed from those called consciously into action may affect the end-result.

BROADENING THE CONCEPTUAL FRAMEWORK

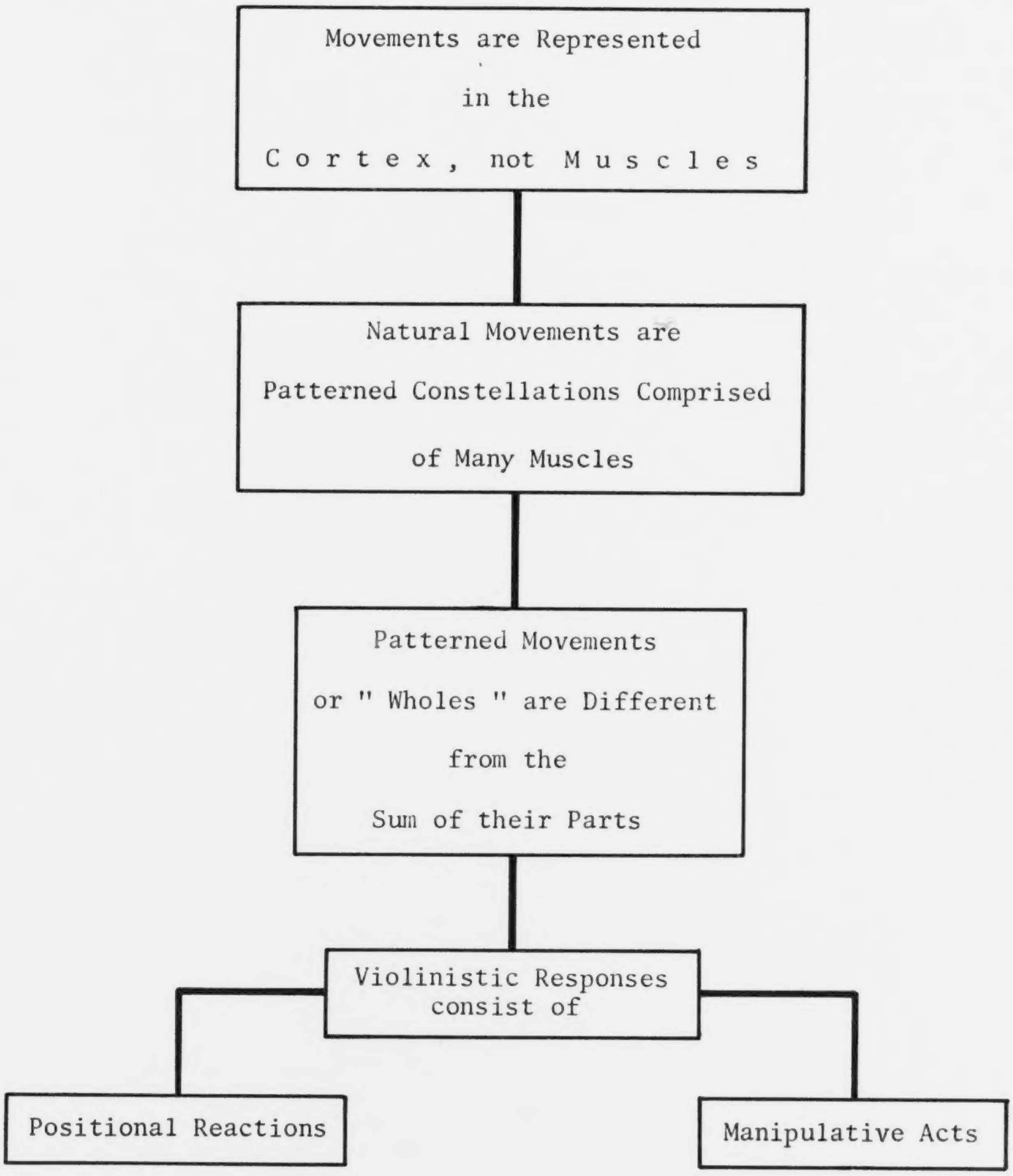

Movements are Represented in the Cortex, not Muscles
Natural Movements are Patterned Constellations Comprised of Many Muscles
Patterned Movements or " Wholes " are Different from the Sum of their Parts
Violinistic Responses consist of
Positional Reactions
Manipulative Acts

Figure 3

Fig. 4: Feedback Loops - For a long time "muscle sense" was assumed to be an integral part of kinesthesia (the perception of movement.) Reasoning from first principles, it seemed eminently appropriate for sensors imbedded in the contractile tissues producing movement to send their messages to the somesthetic cortex. Thus, the end-result achieved could be compared with that intended, and corrected if errors required rectification. Furthermore, the motor input to each individual muscle could be altered on the cord level by its sensory output. The alteration of input by output is a definition of feedback. Little attention was paid to segmental feedback by those interested in motor learning. It was the long loops bombarding the higher centers that were assumed to play a vital role in skill achievement. Soon it became apparent that automatic sensory feedbacks might be as essential to the control of willed movements as voluntary executive orders. Little was known about how proprioception operated and tests of kinesthetic acuity were in general quite unsatisfactory.

FEEDBACK LOOPS

AND THE OLD CONCEPT OF KINESTHESIA

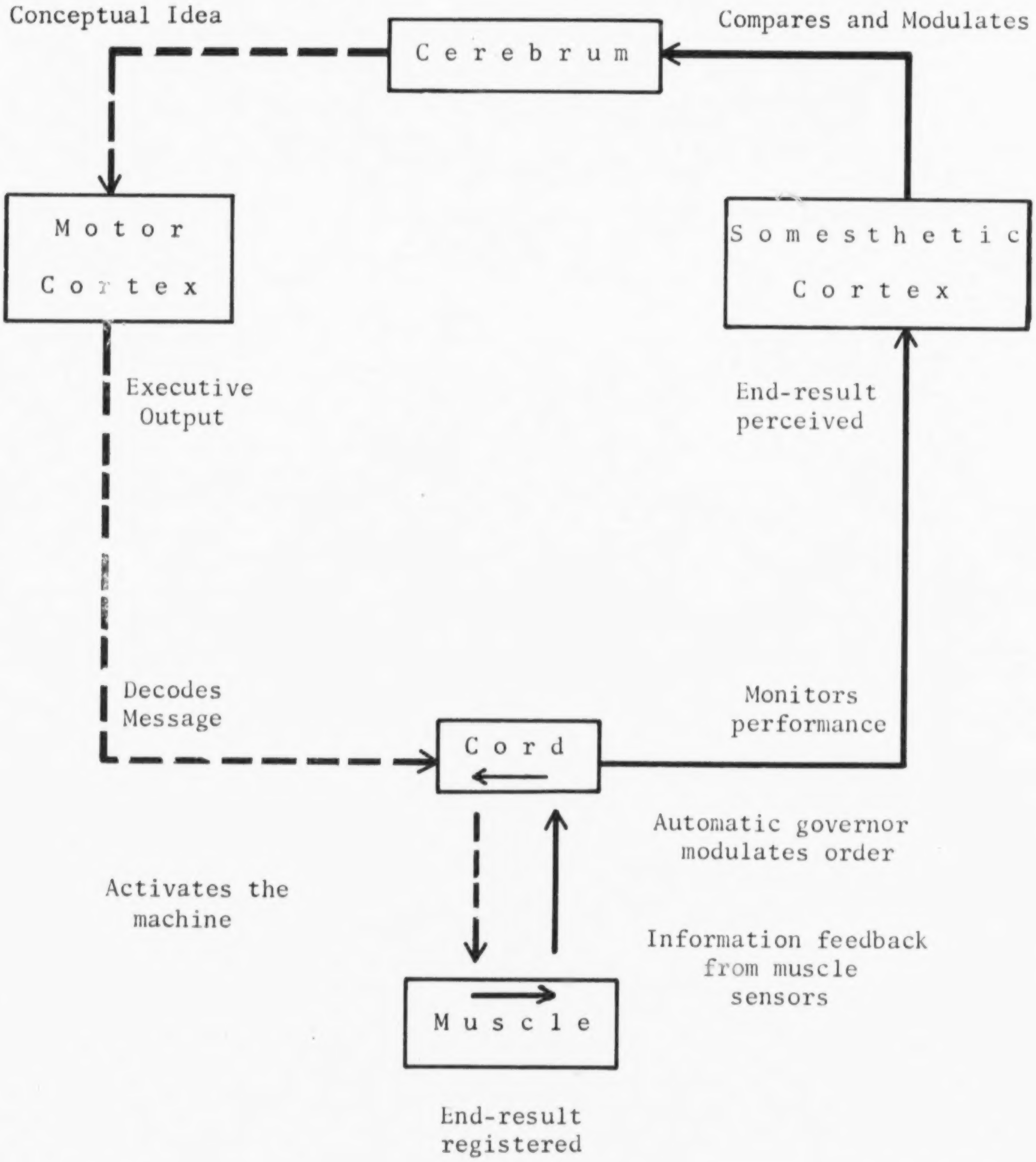
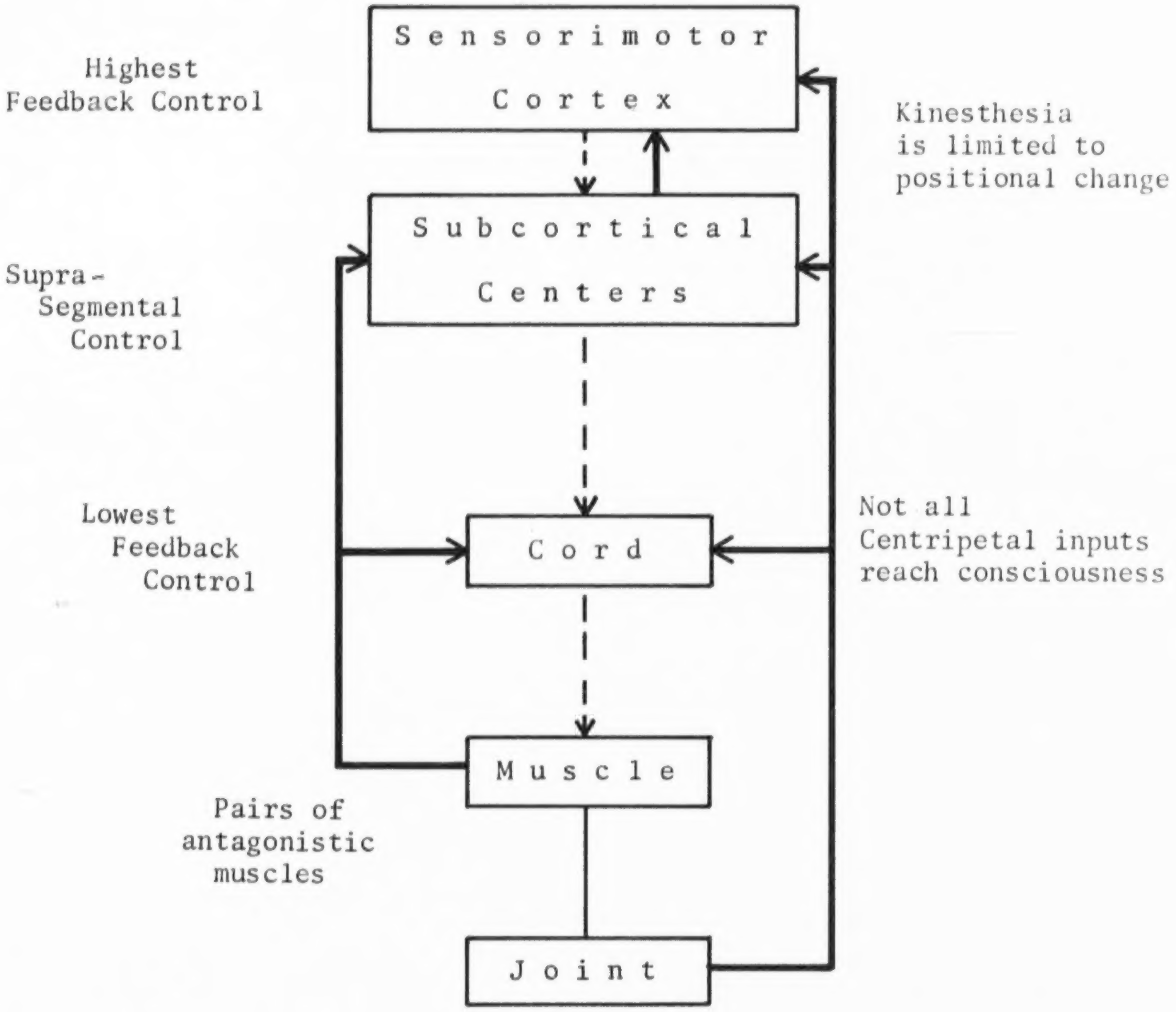

Conceptual Idea
Cerebrum
Compares and Modulates
Motor Cortex
Somesthetic Cortex
Executive Output
End-result perceived
Decodes Message
Cord
Monitors performance
Automatic governor modulates order
Activates the machine
Information feedback from muscle sensors
Muscle
End-result registered

Figure 4

Fig. 5: But Muscles are Insentient - This model shows an hierarchical system of multiple interdependent closed loops. Many flow into subcortical structures like the cerebellum. Others terminate in the basal ganglia or brain stem. These way-stations integrate inputs received from diverse sources and keep the cerebrum informed about the progress of the movements ordered. It is a curious fact only recently discovered that the voluminous inputs from unexpectedly complex receptors imbedded in muscles never reach the somesthetic area of the cortex. This means that muscles are insentient--that is, destitute of consciousness. Thus, kinesthesia (the sense perception of movement) is only indirectly a "muscular sense." Its receptors are located in the joints moved. Why, then, are muscles so singularly well supplied with sensors? The evidence available today suggests that the rich and abundant muscle feedbacks play an important role below the level of conscious awareness. This has implications for the violin teacher, who needs continuously to be reminded that much of what transpires when the pupil is instructed evolves automatically.

BUT VOLUNTARY MUSCLES ARE INSENTIENT

" Muscle Sense " is a Misnomer


Sensorimotor Cortex
Highest Feedback Control
Kinesthesia is limited to positional change
Subcortical Centers
Supra-Segmental Control
Lowest Feedback Control
Cord
Not all Centripetal inputs reach consciousness
Muscle
Pairs of antagonistic muscles
Joint

Positional Control System

Figure 5

Fig. 6: Basic Control Mechanisms - This figure is a modification of Henneman's block diagram (Vernon B. Mountcastle: Medical Physiology, Twelfth Ed., Vol. II, p. 1677, C. V. Mosby Co., St. Louis, 1968.) It epitomizes the nuts and bolts of action control. The differentiation of the jobs done by the great centrifugal tracts, pyramidal and extrapyramidal, will be included in the discussion of the next functional diagram. For the time being, consider only the centripetal (outgoing) flow. Control requires information and sensory feedback is essential for the acquisition of the skills which comprise the basic techniques of violin playing. Facilitation of the particular muscle groups needs results from sensory feedback. The diagram is concerned only with the informational inputs from the internal proprioceptive world. This signals positional changes which result from shifts in the balance of tension between innumerable pairs of antagonistic and synergistic muscles acting on the joints of the body as a whole as well as the parts directly involved in drawing tones of varying texture from the instrument being played. Auditory and visual inputs flow simultaneously as well as those carrying touch, pressure, and vibratory sensations. Subcortical centers filter and integrate a veritable kaleidoscope of sensory inputs. These alert the highest centers of the brain and inform the limbic system which then imparts the affective tone recognized as the feeling state created by the communication of musical ideas. The perceptive pupil becomes increasingly sensitive to variations in the patterns of sensation associated with violin playing.

BASIC CONTROL MECHANISMS OF THE MOTOR SYSTEM

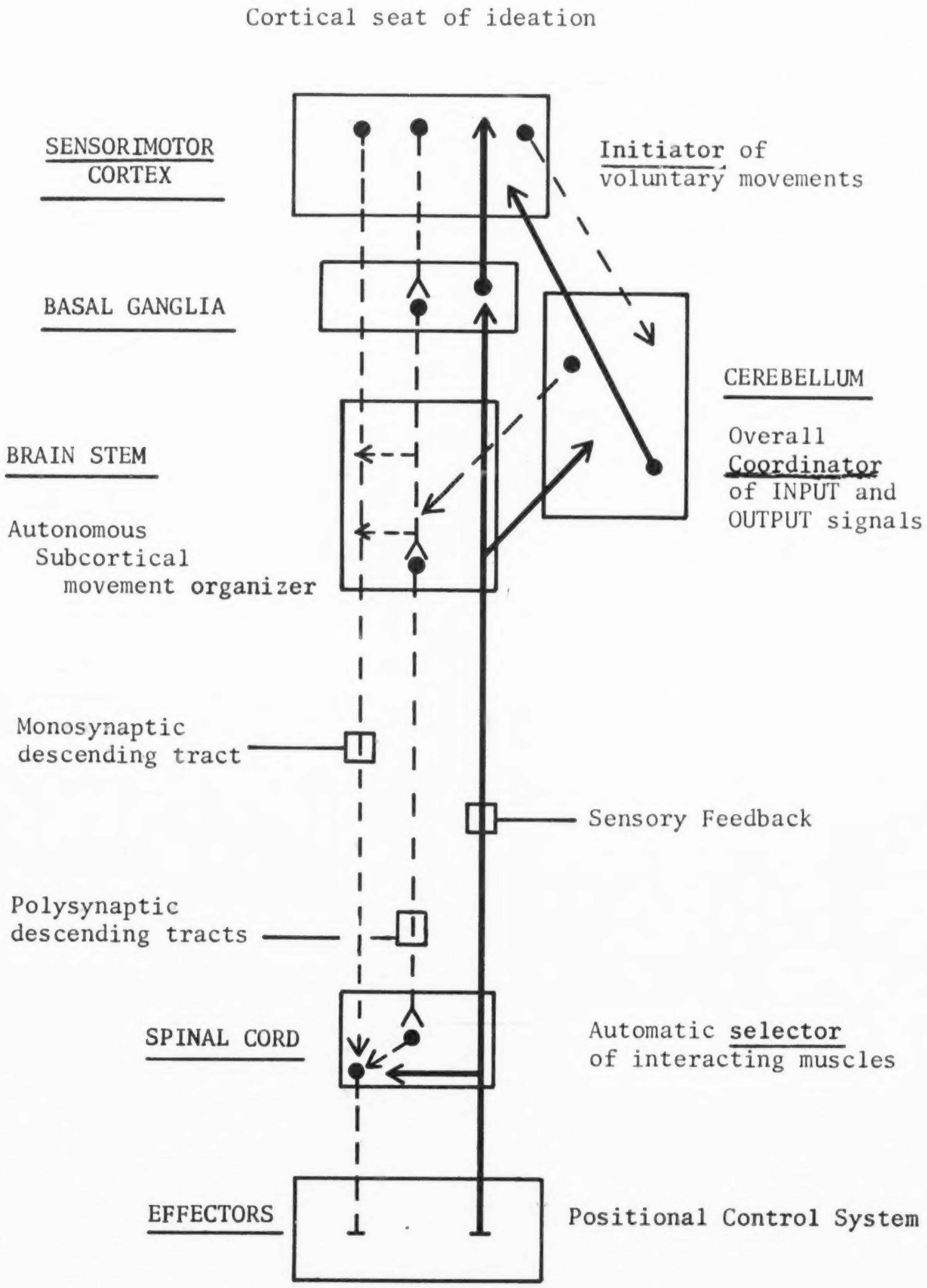

Cortical seat of ideation
SENSORIMOTOR CORTEX
Initiator of voluntary movements
BASAL GANGLIA
CEREBELLUM
Overall Coordinator of INPUT and OUTPUT signals
BRAIN STEM
Autonomous Subcortical movement organizer
Monosynaptic descending tract
Sensory Feedback
Polysynaptic descending tracts
SPINAL CORD
Automatic selector of interacting muscles
EFFECTORS
Positional Control System

Figure 6

Fig. 7: Two Faces of the Physical Act of Violin Playing - Positional adjustments are an important prerequisite for the ordering and management of the manipulative skills of violin playing. These are guided by sensory feedback from the muscles themselves and discharge over the polysynaptic extrapyramidal system. They evoke patterned responses affecting the body as a whole, such as the stability of the stance, the security of the violin hold, the freedom and positioning of the upper extremities, etc. Thus, a continuously adapting postural support provides a substrate upon which the execution of skilled movements depends. It is not yet known exactly how voluntary movements are engendered, where the executive orders come from, nor why they loose their mantle of awareness as a result of learning. It may be assumed that the monosynaptic, fast, direct pyramidal route plays a major role in the manipulative skill aspect of violin playing, but it is not the sole agent of volitional activity. Both systems, pyramidal and extrapyramidal, work together harmoniously. One route cannot execute coordinated movements effectively without the help of the other. The deliniations of the "machine-for-playing-the-violin" and the "machine-for-making-music" are highly speculative. They warrant consideration because contemporary trends in the pedagogics of musical communication recognize that the machinery of the living body, in this case the Black Box of the central nervous system, deals coherently with autonomous operations and thus leaves the mind free to contemplate activities largely overlooked in traditional orthodox teaching.

TWO FACES OF THE PHYSICAL ASPECT OF VIOLIN PLAYING

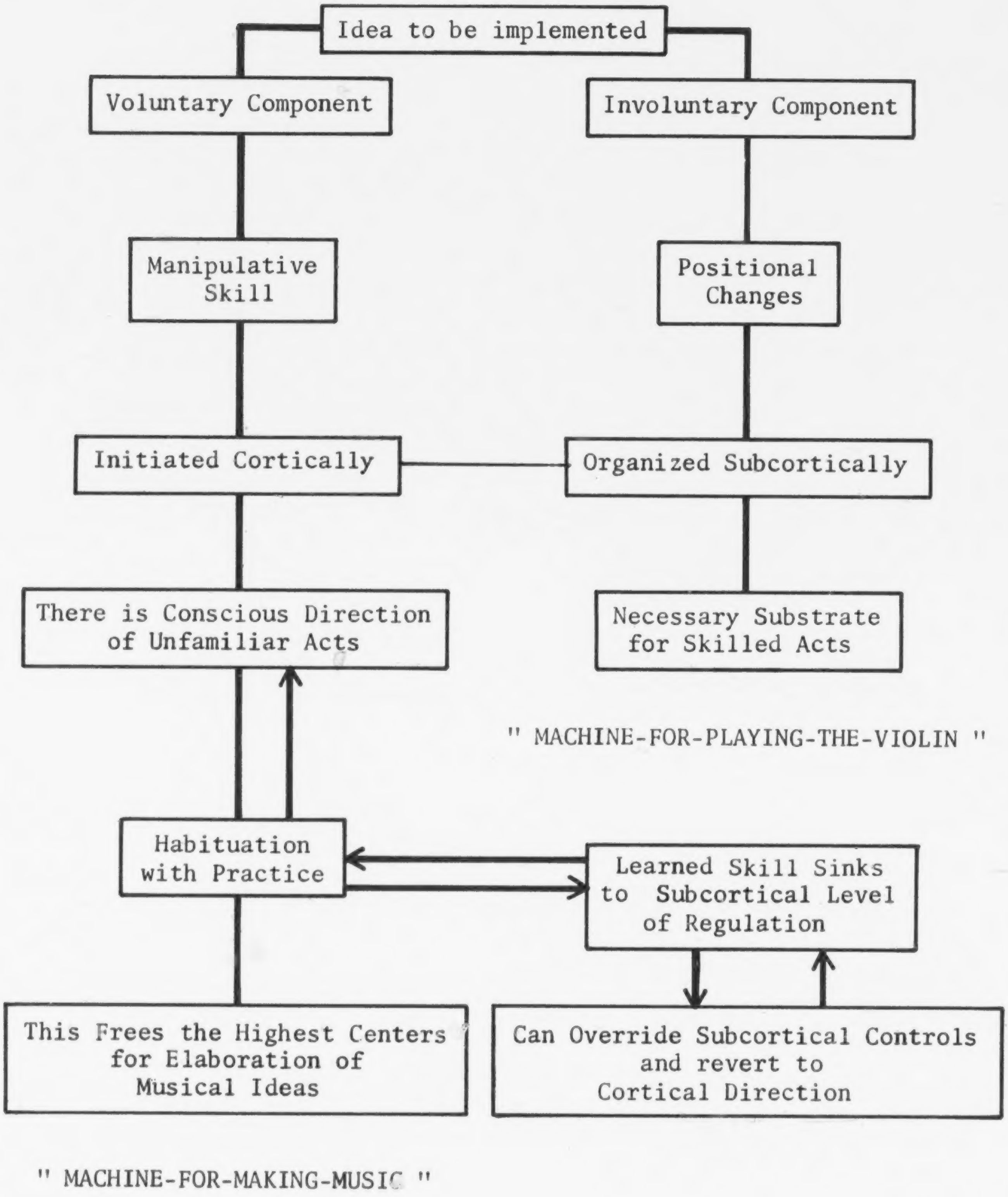

Idea to be implemented
Voluntary Component
Involuntary Component
Manipulative Skill
Positional Changes
Initiated Cortically
Organized Subcortically
There is Conscious Direction of Unfamiliar Acts
Necessary Substrate for Skilled Acts
" MACHINE-FOR-PLAYING-THE-VIOLIN "
Habituation with Practice
Learned Skill Sinks to Subcortical Level of Regulation
This Frees the Highest Centers for Elaboration of Musical Ideas
Can Override Subcortical Controls and revert to Cortical Direction
" MACHINE-FOR-MAKING-MUSIC "

Figure 7

Fig. 8: Cybernetic Concepts - The cortex, brainstem, cerebellum and cord comprise the Black Box of the movement control system. One need not know what happens here. Its operations are too complex to be understood. However, one can deduce what happens in the Black Box by comparing its inputs with its outputs. Inputs can to a large extent be regulated. Outputs can be observed and measured. We know from everyday experience that a considerable degree of control is exercised over the sensory data chosen to engage the attention at any moment. We know also that we can describe end-results and often do so in meticulous detail. It is well, therefore, to remember that much of what happens when a volitional act is implemented is the automatic by-product of the operation of built-in control mechanisms which run their course without cortical direction. What is identified by the clever and observant teacher is not necessarily what is amenable to conscious control. If translated into a directive, the pupil may or may not be able to accomplish the objective by exercise of the will. Man does not learn naturally along efferent lines--that is, by trying to direct consciously what happens automatically in part or in whole. Common sense suggests that desired end-results may be acquired more effectively by learning how to recognize and modulate the sensory cues essential to the control of goal-directed movement.

MOTION CONTROL SCHEMA
IN CYBERNETIC TERMS

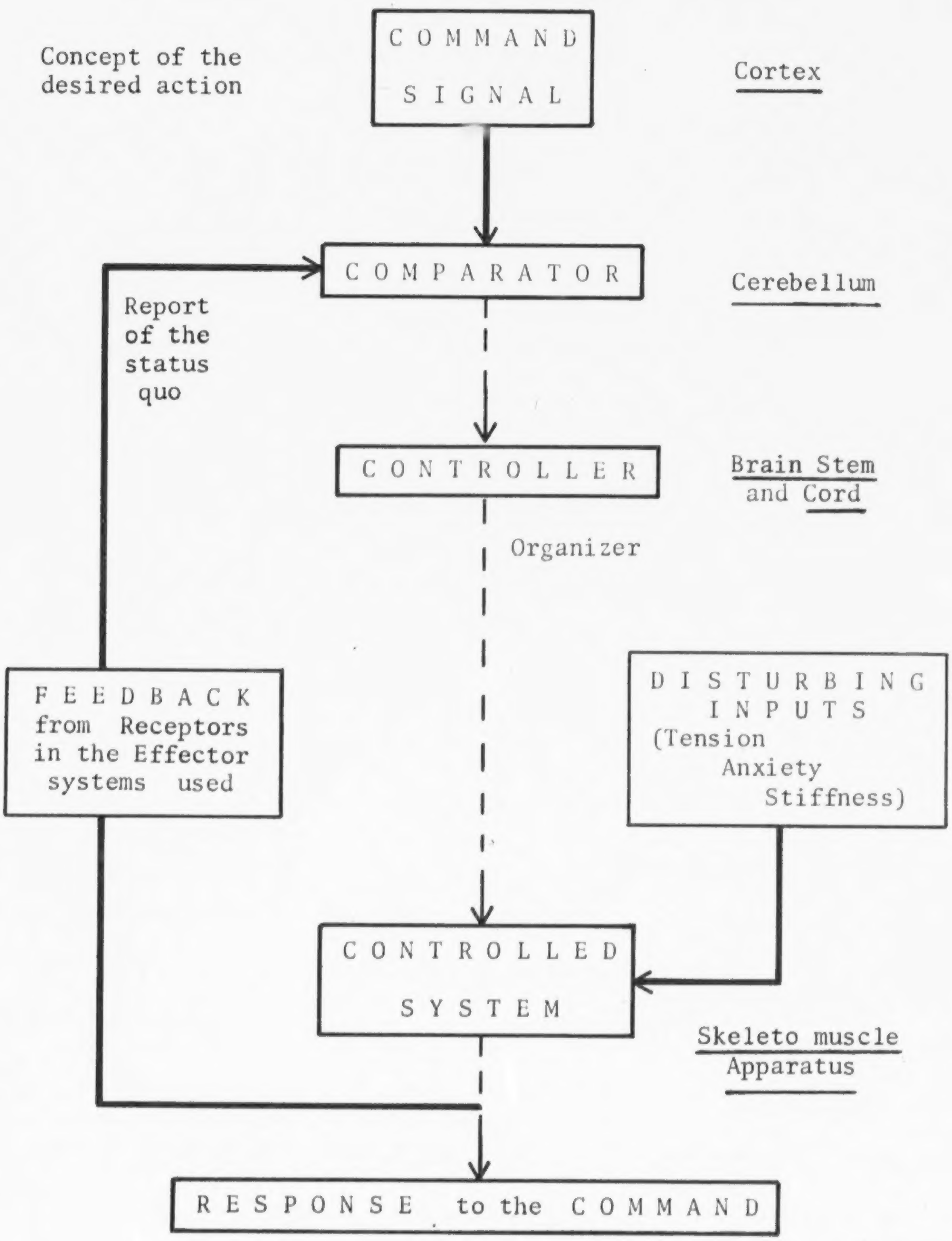

COMMAND SIGNAL
Concept of the desired action
Cortex
COMPARATOR
Cerebellum
Report of the status quo
CONTROLLER
Brain Stem and Cord
Organizer
FEEDBACK from Receptors in the Effector systems used
DISTURBING INPUTS (Tension Anxiety Stiffness)
CONTROLLED SYSTEM
Skeleto muscle Apparatus
RESPONSE to the COMMAND

Figure 8

Figures 9, 10, 11 and 12: The Drift of Contemporary Trends - The next series of schematic diagrams attempt to strike in a few bold strokes at the heart of four pedagogic innovations that seem, each in its unique way, to protest the stereotypic dogmas of the past. They have one point in common, visible to a biological scientist if not to the proponents of the methods. They all recognize and propose various devices to facilitate the inborn capacity of normal individuals, and especially of children, to perform even unfamiliar physical activities in simple and natural ways. In the young the most complex perceptual and motor skills grow and develop without harassment, tension or anxiety. In the highly motivated, prodigious quantities of factual information may be absorbed as though by osmosis if knowledge seems relevant to excellence in the special skill. The machinery of the living body has potential know-how being by-passed, obstructed or distorted by the violin teacher. This resides in the hidden workings of the central nervous system which operate beyond the reaches of conscious awareness.

Recent advances in the neurosciences, and the new cross-disciplinary science of cybernetics, have done much to expose the wondrous infallability of Black Box operations, "when left in peace," to use the expression of Aldous Huxley in his illuminating Foreword to Bonpensiere's philosophical treatise on piano playing. Bonpensiere's thesis comes close to the central core of what has been wrong with so much instrumental teaching.

THE DRIFT OF CONTEMPORARY TRENDS

Shinichi Suzuki: Talent Education

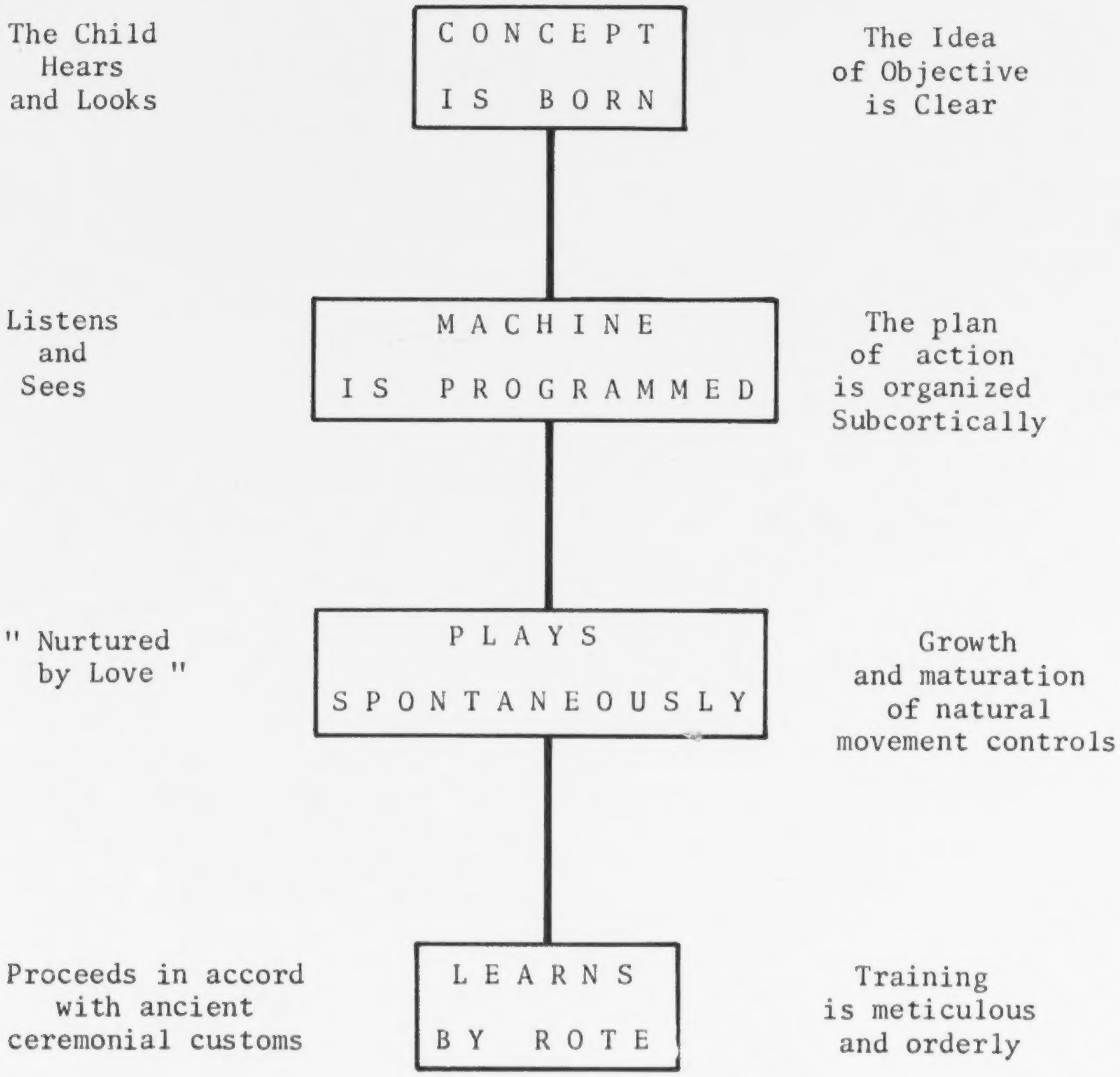

The Child Hears and Looks
CONCEPT IS BORN
The Idea of Objective is Clear
Listens and Sees
MACHINE IS PROGRAMMED
The plan of action is organized Subcortically
" Nurtured by Love "
PLAYS SPONTANEOUSLY
Growth and maturation of natural movement controls
Proceeds in accord with ancient ceremonial customs
LEARNS BY ROTE
Training is meticulous and orderly

Figure 9

(Figures 9, 10, 11 and 12 continued)

It is quoted at the end of this commentary because it tells us in essence that the time has come to take a new look at which channels are forever closed if violin playing is to be revived as a living communicative art, and which must be assiduously nurtured.

....All through the process of acquiring skill in various voluntary motions, we become aware that the management of our conscious guidance is limited to the control of our sensory data--eyesight, touch, kinesthetic sensation and intensity of effort--but that the actual processes of physiological activity--neural impulse, muscular innervation, selective neuro-muscular connections and coordination--are beyond the reach of our volition and, consequently, beyond conscious guidance.

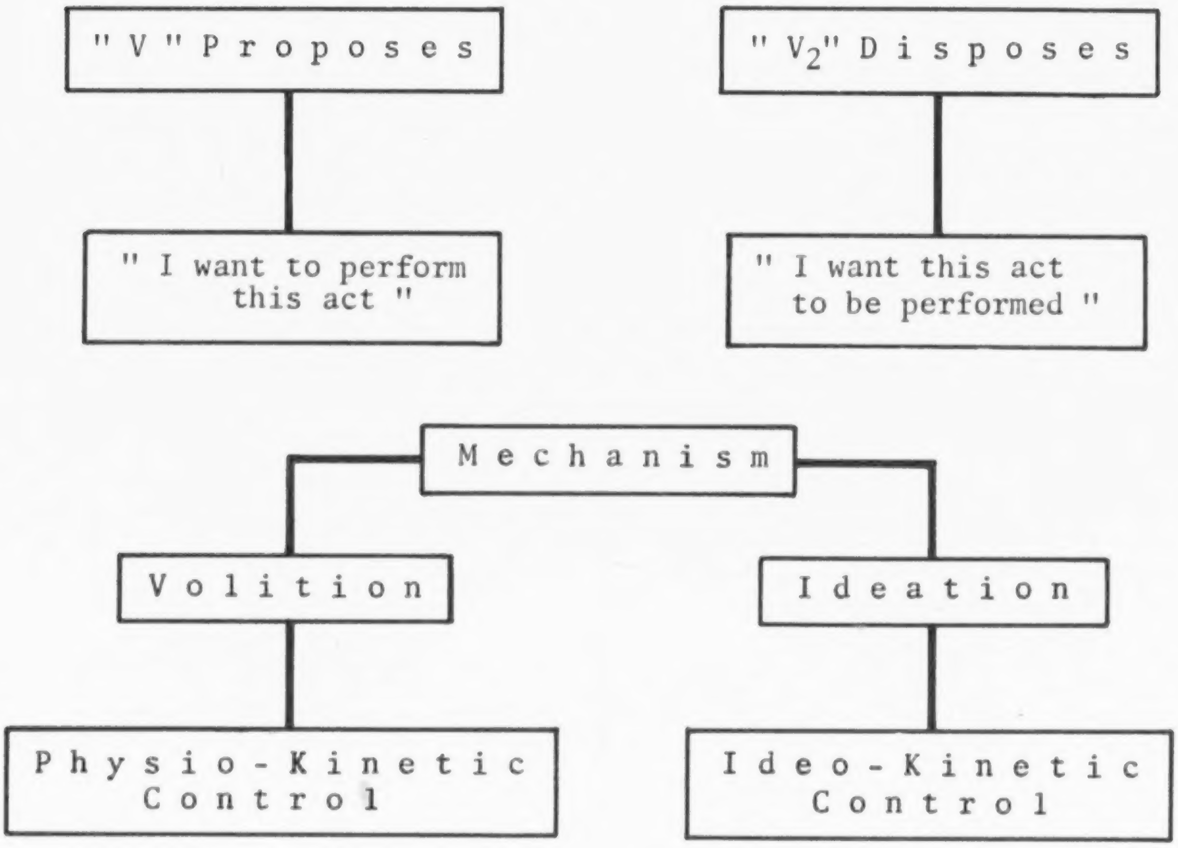
Luigi Bonpensiere: New Pathways to Piano Technique, A Study of the Relations Between Mind and Body with Special Reference to Piano Playing, Philosophical Library, New York, 1953.

THE DRIFT OF CONTEMPORARY TRENDS

Luigi Bonpensiere: Study of the Relations Between Mind and Body with Special Reference to Piano Playing

" V " = conscious guidance

" V_2" = guidance bestowed by nature


" V " Proposes
" V_2" Disposes
" I want to perform this act "
" I want this act to be performed "
Mechanism
Volition
Ideation
Physio-Kinetic Control
Ideo-Kinetic Control

CORTICAL

Submission to "the conscious ego's will to perform an action "

SUBCORTICAL

"The not-self that does everything as it ought to be done if left in peace "

Figure 10

Kató Havas: The New Approach To Violin Playing

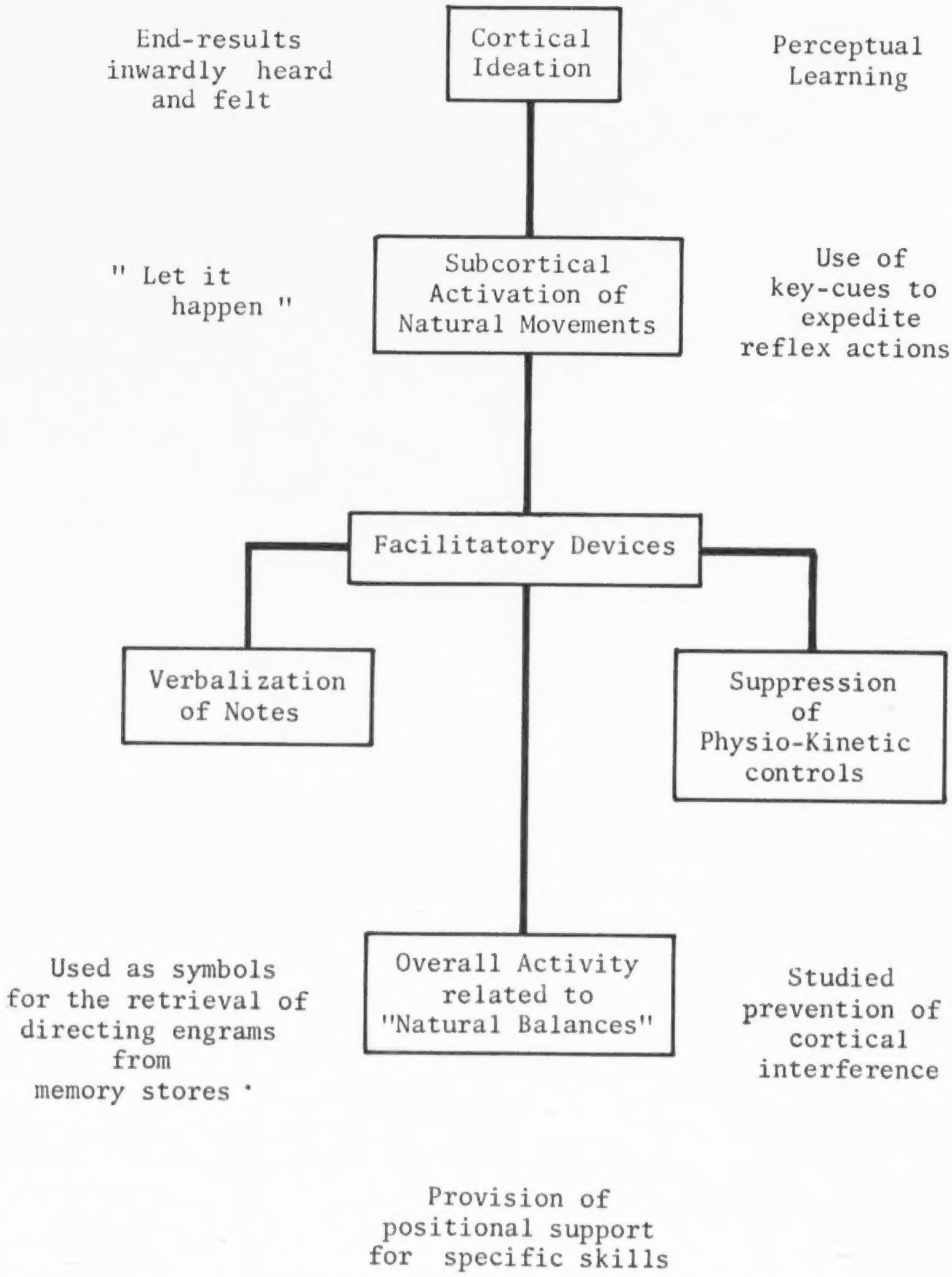

End-results inwardly heard and felt
Cortical Ideation
Perceptual Learning
" Let it happen "
Subcortical Activation of Natural Movements
Use of key-cues to expedite reflex actions
Facilitatory Devices
Verbalization of Notes
Suppression of Physio-Kinetic controls
Used as symbols for the retrieval of directing engrams from memory stores
Overall Activity related to "Natural Balances"
Studied prevention of cortical interference
Provision of positional support for specific skills

Figure 11

THE DRIFT OF CONTEMPORARY TRENDS

Paul Rolland: The Teaching of Action in String Playing

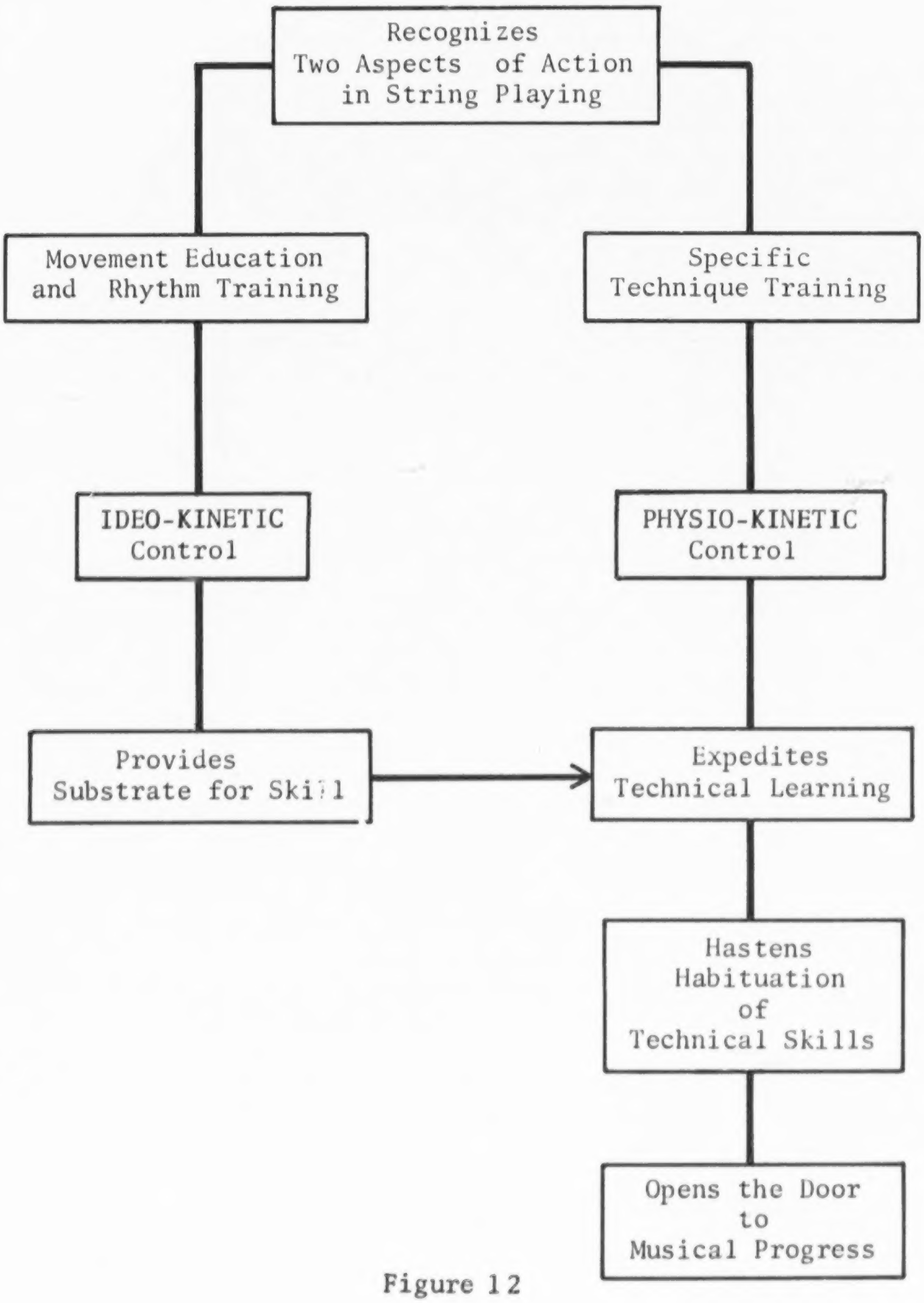

Recognizes Two Aspects of Action in String Playing
Movement Education and Rhythm Training
Specific Technique Training
IDEO-KINETIC Control
PHYSIO-KINETIC Control
Provides Substrate for Skill
Expedites Technical Learning
Hastens Habituation of Technical Skills
Opens the Door to Musical Progress

Figure 12

CHAPTER TEN

STATE-WIDE TRIAL OF MATERIALS

Selection of Project Centers

Since Illinois is diversified in socio-economic levels, the original plan of the Project was to establish centers throughout the state in order to assess the validity of the materials in different situations. The staff had no difficulty in establishing a sufficient number of centers in the northern and central areas. However, since the southern part of the state has relatively few string programs, equal representation from this area was not possible. The one center established in the south had to be discontinued because of the teacher's illness.

After obtaining a list of string programs from the Illinois Office of Education, staff members visited many schools and invited a number of teachers to participate in the Project. Each teacher who expressed a desire to conduct trial classes received the following letter:

July 15, 1967

Dear __________:

The University of Illinois String Research Project has begun the first year of planning activities, and one of our primary concerns, as you know, is to have an effective trial phase of the materials. We believe the Project will be strengthened by working cooperatively in all phases with outstanding public school teachers. We have already discussed your valued participation in our Project.

May we formally approach your superintendent requesting official sanction of your participation? Our plans include sending him a copy of the proposal as accepted by the U. S. Office of Education. We shall request the following conditions from our participating members:

(1) That one or more classes be started during the summer or fall of 1967, in which the principles and materials developed in our Project would be tested. Each class would consist of six to ten students (primarily violinists) from grades four, five, or six.

(2) That the frequency of class meetings be set at a minimum of two forty-minute class lessons per week, with six additional meetings during the first phase of instruction.

(3) That a record player be provided for carrying out the instruction. A 16mm projector is to be supplied as needed occasionally for study and observation of films developed by the Project.

Please send us your superintendent's name and mailing address, the names of other staff members in your school system who should be informed, and your home and school telephone numbers.

This is what we can offer you as a participant in the Project:

(1) After confirming your participation, you will be invited to our planning meetings for teachers and advisors. You will be the guest of the University during the planning meetings, and your travel expenses will be paid. During the meetings, the pedagogy and materials will be discussed in detail and shown on films. We would like to have the privilege of sharing your ideas to benefit and shape our program.

(2) During the trial phase of the program (1967-68, 1968-69) we shall furnish student books and records, teachers manuals, and films for your classes.

(3) Research personnel, including this writer, will be available for consultation during the duration of the Project. Periodic visitation of the various centers of instruction will be offered by the research staff.

May we have the enclosed reply form back by return mail?

Sincerely yours,

Paul Rolland
Project Director

Project classes were taught by the following teachers during the first year of trial teaching, 1967-68:

Richard Casper	Peoria
Lawrence Christiansen	Elgin
Bonzie Gilbert	Bloomington
Milton Goldberg	Winnetka
Deanne Hauser	Elmhurst
Sister Jacquelyn Hoffman, S.P.	Wilmette
Lowell Kuntz	Normal
Don Langellier	Quincy
James Paulding	Macomb
Wayne Pyle	Quincy
Ann Robert	Peoria
Marylyn Sexton	Lombard
Jerald Slavich	Champaign
George Teufel	Elmhurst
David Ulfeng	Charleston
Norman Werner	Decatur
Edward Wilcox	Champaign

During 1968-69, thirteen of the teachers continued their classes in order to test the more advanced Project materials. Since not all of the films and manuals relevant to first-year classes had been completed in 1967-68, many of the teachers participated in a retrial of the beginning materials. Beginning classes were also taught in the new centers included in the following complete list of 1968-69 Project centers:

Irene Adler - Betty Hansen	Deerfield
Ralph Bowen	Springfield
Deanne Hauser Bryant	Normal
Virginia Campagna	Alton
Tanya Carey	Macomb
Richard Casper	Peoria
Lawrence Christiansen	Elgin
Bonzie Gilbert	Bloomington
Milton Goldberg	Winnetka
Judith Graham	Morton Grove
Thomas Hageman	Wheeling
Sister Jacquelyn Hoffman, S.P.	Wilmette
Marlou Johnston	Lincolnwood
Don Langellier	Quincy
Sister M. Michelle	Chicago
Wayne Pyle	Quincy
Nora Roll	Chicago
Marylyn Sexton	Lombard
Jerald Slavich	Champaign
George Teufel	Elmhurst
Norman Werner	Decatur
Edward Wilcox	Champaign

At the end of the first year of participation, the following teachers withdrew from the program:

Lowell Kuntz, Illinois State University Laboratory School, Normal. Mr. Kuntz based his request to drop the program on lack of time to adequately prepare the new concepts.

James Paulding, Western Illinois State University Laboratory School, Macomb. Mr. Paulding left the school. His classes were continued in 1968-69 by Tanya Carey.

Ann Robert, Peoria. Miss Robert resigned from the school system to enter the University of Illinois Graduate School.

David Ulfeng, Eastern Illinois State University Laboratory School, Charleston. Mr. Ulfeng left Eastern to play in the Minneapolis Symphony. His replacement did not wish to continue the program.

The following teachers discontinued the Project during the 1968-69 trial of the materials:

Ralph Bowen, Springfield. Since Mr. Bowen was the only string teacher in the Springfield Public Schools, he found it difficult to find time to prepare the materials and concepts, all of which were new to his thinking.

Virginia Campagna, Alton. When Mrs. Campagna became ill for several months, no teacher was available to continue her classes.

Milton Goldberg, Winnetka. Mr. Goldberg's classes were too small to meet the Project requirements.

Observation of Trial Classes

In accord with a schedule devised by Don Miller, Coordinator of the State-wide Project, each assistant was assigned two or three centers for observation on an average of once every three weeks. The assistants reported the number of viewings of each Project film and completed questionnaires prepared and filed by Richard Colwell, Associate Research Director. These research tools are presented in Chapter Eleven and Appendix C. In order to assess the effectiveness and clarity of the Project films and materials, Dr. Colwell instructed the Project assistants not to coach the cooperating teachers on any facet of the curriculum.

On visits three, seven, and twelve, the assistants photographed the individual students. Although still photographs cannot measure the student's mastery of an "Action Study," they indicate the attainment of positional skills, which to a degree are a sign of progress.

The Project Director visited each center once during each school year. He also met weekly with the assistants to explain and demonstrate the correct application of each "Action Study," in order that their reports be as accurate as possible.

During the second year of trial teaching, a new format was instigated in which the northern area of the state was observed by Margaret Farish, Research Associate.

Communication with the Cooperating Teachers

The three conferences with the cooperating teachers are reported in Chapter Seven. In addition, the Project Director and Coordinator of the State-wide Project wrote to the teachers frequently to inform them of Project goals, procedures, and progress. The following letter is presented as a sample of these communications.

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October 9, 1968

Dear Colleagues:

I would like to express my appreciation to each of you for your interest in the Project and your attendance at our meeting held in September.

We are ready now to begin visiting your Project classes to make the necessary research evaluation. We will plan to visit classes twelve times during the school year. In order to work out a regular schedule, please notify us of your class schedule within the next few days unless you have already done so.

There are a few points that I would like to restate in writing, since I feel they are essential to good teaching within the Project.

1. The essence of the Project is to develop good form and motion patterns, free from excessive tension.

2. The musical materials used are of secondary consideration. What is selected should be used as a vehicle to realize the first objective.

3. You may or may not use the musical materials developed by the Project. However, you are expected to spend not less than one-half of the teaching time to achieve the goal stated under #1.

4. The material is now better organized. If you follow the Curriculum Guide, you should have no problem in sequencing the material correctly. The outline covers all motion skills under consideration. These should be introduced, under ideal circumstances, during the first year, leaving the second year of instruction for refining review and enrichment.

5. Please keep in mind that our main goal is: beautiful tone and intonation through beautiful motion patterns. To quote Leonard Rose during his stay here several years ago: "The really fine player not only sounds beautiful but also looks beautiful." Eliminate excessive tensions in your pupils by inducing motion--however slight--in every joint of their bodies: in the shoulder, neck, waist, and knees.

6. The results of the first year of trial teaching indicate the following:

a) Intensive use of left hand pizzicato helps to establish good left arm and violin relation, as expected, but it will not "automatically" shape the hand and fingers in the first position. Much care is needed to establish the proper angle of the hand and fingers in its relationship to the fingerboard--especially that of the first finger.

b) More drill is needed before the children can be expected to play "add-a-part" type of open string accompaniments. This has been taken into account in the Curriculum Guide.

c) Use the long pizzicato movement ("Fly Pizzicato") as a means of preparing for long strokes.

d) Present the low, middle, and high position concept early.

e) Avoid a regimented look in body movements. In swift and long strokes, the body movement is "bilateral" (opposite to the direction of the bow). However, in slow strokes it may be "unilateral." Thus, at borderline speeds, the movements may occur in either direction.

f) Practically all children want to avoid exposing their sensitive finger tips to the string and the frog. Instead, they want to use flat fingers, because this is more comfortable. Therefore, correct angle of the left hand fingers and exercising the right thumb (so that it supports the bow with its tip near the upper right corner of the nail) should be a constant subject of review.

7. Some details which tend to defeat Project principles and slow down progress:

a) Lack of tuners. Please use four metal strings with tuners--preferably Thomastic tailpieces. "Sell" your dealer on the wisdom of investing an extra $2.50 (wholesale) for a Thomastic tailpiece.

b) Taking the violin away from the child for tuning. This is a poor shortcut. Let the children participate in tuning by plucking, bowing, and listening.

c) Jammed classrooms that hamper free movement. Move around in the classroom. Associate violin playing with free movement, not with a can of sardines.

d) Please show the films repeatedly to your classes. Prepare the showings by teaching in advance at least some of the techniques presented in the films. Refer to the film scenes during your classes.

e) Please use the Project terminology in your teaching. This is important for our evaluation procedures. We must have a common language while the Project is in progress. Otherwise, the Project assistants cannot communicate with you or the children.

f) And finally, a plea for a more thorough study of the films and manuals. At the September meeting, it was quite obvious that the teachers of the centers which were especially successful knew their manuals "inside-out!"

8. We want to learn from you! Please report to me or to the assistants anything which is incorrect or not clear in the manuals and the student materials. We plan to improve and revise these before their distribution

9. Our assistants will follow a definite observation schedule. Please reserve time on their visiting dates for personal conferences.

Finally, please accept my heartfelt thanks for your help and cooperation in the coming year and for reading this long letter.

Yours truly,

Paul Rolland

Distribution of Materials

Film Distribution

The Project staff asked the cooperating teachers to show each film two or three times during the appropriate period of instruction. Each teacher requested the films from the Project office or from Margaret Farish, Northern Area Coordinator, who retained and distributed a portion of the film library during 1968-69.

The number of film viewings in each center is reported in the following tables. Since the films "Principals of Left Hand and Finger Action," "Rhythm Training," and "Bouncing the Bow" were not available until late spring of 1968, Table 1 shows relatively few viewings of these films. During the 1968-69 trial and retrial of the materials, all of the films listed on Tables 2 and 3 were available in September. Tables 2 and 3 also include tabulations of the number of "Action Studies" introduced in each center.

Musical Materials

As stated in the original proposal, the "Action Studies" presented in the films and manuals were the core of the research, and these were to be compatible with musical material of the teacher's choice. Therefore, the musical materials developed by the Project were offered to the cooperating teachers as an option. Almost all of the teachers requested the various tune and exercise recordings and their texts. Many also ordered the musical materials inspired by the Project (the pieces by Stanley Fletcher and contemporary works described in Chapter Fourteen).

TABLE 1

PROJECT FILM SHOWINGS, 1967-68

SCHOOL CODES	Remedial	Establishing the Vln. Hold - Part I	Establishing the Vln. Hold - Part II	Learning to Hold the Bow	Playing at the Middle with Short Bows	Principles of Left Hand and Finger Action	Establishing Left Hand and Finger Placement	Rhythm Training	Bouncing the Bow
14	1	1	1	2	1				
22	4	4	4	4	2		1		
2		2	2	2	2		2		1
13	1	1	1	1	1				
21	1	3	3	3	3				
10	1	2	2	2	1	1	3		1
15		3	3	3	3		1		
17		1	1	1	1		2		2
13		3	3	3	3		2		1
6	1	2	2	1	1				
11		2	2						2
9	2	2	2	2	1	1	1		1
8	1	3	3	3	3		1		1
19		1	1				2		1

TABLE 2
PROJECT FILM SHOWINGS, 1968-69
FIRST-YEAR CLASSES

School Codes	Number of Films Shown	Number of Films Shown More than Once	Number of Action Studies Introduced	Establishing the Vln. Hold - Part I	Learning to Hold the Bow	Rhythm Training	Establishing L.H. and Finger Placement	Playing at the Middle with Short Bows	Vibrato	Extending the Bow Stroke - Part I	Basic Shifting Movements	Establishing the Vln. Hold - Part II	Developing Finger Movement	Martelé and Staccato	Bouncing the Bow	Extending the Bow Stroke - Part II	Developing Flexibility	Sustained Strokes & Détaché
20	9	9	77	3	3		3	3		3		3	3		3	3		
3	10	7	66	1	2		2	1		2		2	2	1	1	2		
7	10	9	65	2	2		3	2		3	1	3		3	2	2		
1	12	9	72	3	3	3	3	3		2	1	3	1	3	1	3		
19	6	5	73	3	2	2		2		2						3		
4	7	5	53	2	2		2	2				2	1	1				
9	10	4	50	2	2		1	2		2		1	1	1	2	1		
2	10	6	56	2	2		1	2		2		2	1		2	1	1	
16	3	0	41	1	1											1		
17	3	0	34	1	1											1		
14	10	0	112	1	1		1	1	1	1				1	1	1	1	
5	12	10	55	3	3		3	2		3	1	3	2	3	3	3	1	
18	12	12	77	3	3		3	4		3	3	3	3	3	3	2	3	
15	10	7	68	2	2		2	2		1	2			2	2	1	1	
11	15	15	82	3	3		3	3	3	3	3	2	2	3	3	3	3	3
10	9	9	75	5	5		5	5		3		3		3	4	3		

TABLE 3

PROJECT FILM SHOWINGS, 1968-69
SECOND-YEAR CLASSES

School Codes	Number of Films Shown	Number of Films Shown More than Once	Number of Action Studies Introduced	Establishing the Vln. Hold - Part I	Learning to Hold the Bow	Rhythm Training	Establishing L.H. and Finger Placement	Playing at the Middle with Short Bows	Vibrato	Extending the Bow Stroke - Part I	Basic Shifting Movements	Establishing the Vln. Hold - Part II	Martelé and Staccato	Bouncing the Bow	Extending the Bow Stroke - Part II	Developing Flexibility	Developing Finger Movement	Sustained Strokes and Detaché
17	2	2	63	3	3													
15	15	14	12	3	3	3	3	3	3	3	3	2	3	3	3	3	2	1
9	8	8	79	2	2		3	2		3		2	2	3	2			
2	7	1	75				2			1	1		1	1		1	1	
16	2	0	27	1	1													
8*	11	11	95	3	3		3	3		3	3	3	3	4	6	3	3	
15	9	2	81	1	1		1	1		1	1	1	2	2				
10	7	7	41	3	3		3	2		2			2	2				

* Classes combined into one class--1967-68 Beginner
1968-69 Second Year
1968-69 Beginner

CHAPTER ELEVEN

EVALUATION OF MATERIALS

Introduction

The task of evaluating any curriculum research project is great. Decisions must be made on the use and importance of gain scores. on the possibilities of evaluation against a set standard, on the relative weight of each objective, and so on. In curriculum projects concerned with subject matter and heavily endowed with behavioral objectives from the cognitive domain, some of the major evaluation problems have been identified. However, in this Project, with primary emphasis on psychomotor and affective skills, evaluation techniques had to be exploratory in nature.

A search of the literature was frustrating; curriculum evaluation materials primarily consist of the present five issues of the AERA monograph series on curriculum evaluation (B. Othanel Smith, Advisory Editor, Rand McNally & Co., Chicago, 1967-70), and none deals directly with problems in music, although Number Two, Evaluation Activities of Curriculum Projects by Hulda Grobman, was helpful in basic structure. Some hope for assistance was generated by the publication Behavioral Objectives in the Affective Domain (Albert Eiss and Mary B. Harbeck, National Science Supervisors Association, Washington, D. C., 1969). However, affective was defined as encompassing only attitude, a definition too narrow for music education. The excellent evaluation paper by Jack Davis of CEMREL (Central Midwestern Regional Educational Laboratory) does not deal with the objectives of primary concern in this Project.

Thus, the spate of interest in curriculum evaluation in the arts during the four years since the inception of this Project has not altered any of the basic evaluation designs devised by Dr. Richard Colwell, Associate Research Director of the Project.

Evaluation plans for the Project were formulated simultaneously with the research design. The tools were outlined but not constructed. The basic consideration was that if the results might be positive, the evaluation must not only be acceptable to the specialist in this area but must also provide evidence in a manner that might encourage performing musicians, a group often not affected by new ideas in education, to give serious consideration to any new techniques and/or materials. At this time the normal problems were envisioned, such as difficulty in equating groups, small size of string classes, a lack of standardized measures for evaluating many of the outcomes important in string instruction, the teacher variable, and the general problems incumbent with curriculum evaluation such as incidental learnings. Certain problems were not anticipated, however, which directly and indirectly affected the evaluation design, such as the uneven delivery dates of Project materials and the reluctance of some teachers to accept some of the new ideas in practice after they had accepted them in principle. The research design was rigorous, however, in several respects, and the evaluation techniques planned for the Project seemingly have provided some indicators of progress or lack of it in spite of deficiencies in teacher cooperation and material sequencing.

The primary objective of the Project was to develop playing habits free of excessive tension in young string players. To the musician the most important evaluation design is a posttest only. The real consideration is: how well does the string student play at the completion of a sequence of experiences? The concern in music circles is not with control and experimental groups and indeed need not always be. One can determine excellence of skill development or a lack of it rather easily. In this Project some method needed to be used which would determine whether Project students played well at the end of one or two years of instruction and, if possible, to determine if they, indeed, played with less tension than might be expected from conventional instruction. Some of the traditionally trained advisors to the Project with respect to research felt that a control and experimental group would be the only satisfactory way to evaluate this type of research. However, the Associate Research Director, a person somewhat experienced in evaluation in music, felt that the variables and difficulties encountered in finding equivalent control groups far exceeded the problems of evaluation with a single experimental group using other appropriate controls. There seemed to be an accepted belief within the string profession that most youngster have serious problems with muscular tension regardless of the method of approach. Thus the question to be answered was not whether method A was better than method B but whether techniques and materials could be developed that would result in tension-free playing. The Project staff knew that some players developed tension-free playing because of or in spite of the materials or methods of teaching, but the concern was to achieve this with a larger than normal percentage.

A simple and efficient way to evaluate the progress of a project is to have the students play before a group of knowledgeable string teachers who could be considered competent to judge whether the students play with freedom of movement. A second method is to video tape or film the students and again have experts evaluate their progress from this evidence. These single evaluations were rejected as insufficient, because of the complexity and invalidity of judging performance from a single viewing. This procedure is also fraught with the problems of student nervousness occasioned by playing before experts and other invalidities of single shot evaluation. The decision was made that the evaluation should consist of not only these activities but also an evaluation based upon a modified time series design.

Considerable effort was expended in sending members of the Project staff to each school on a periodic basis to obtain a valid evaluation. Project staff members averaged a visit every three weeks, which provided a basis for evaluation of the end product as well as evaluation of several subordinate projects which evolved out of the primary goal. This activity is described in Chapter Ten, State-wide Trial of Materials. These evaluations were designed to be flexible in order to provide feedback to the Project Director as well as to furnish objective evidence of the success or failure of the Project. A variety of methods was used: (1) Project staff members were given checklists (see Appendix C) to fill out for each center visited. (2) In addition to observing the instruction the Project assistants met with the teachers whose classes were under observation and asked questions which had been outlined in advance. (3) On three visits Project assistants took still pictures of students selected at random from the class. These were designed to show specified positions and other aspects of string instruction pertinent to that week of instruction. (4) On some visits staff members videotaped the work in the Project centers for review at the university by the entire staff. (5) Interviews were held with randomly selected students to ascertain what emphasis the teacher was giving to various phases of the Project. (6) Questionnaires were constructed to be completed by the parents to verify the activities of the students and to gain some impression of what the parents thought of Project materials and activities. (7) Teachers were given specially designed rating forms to evaluate Project students and to provide other needed evaluative data to the Project staff. Stress must be placed on the fact that no attempt was made in the Project to determine whether one method of evaluation was more successful than another or whether the "Rolland" instructional method was better than any other. Rather, the approach was that each evaluation technique was necessary to provide anything resembling an accurate picture of Project results. A few sample forms of the evaluation devices used are contained in Appendix C of this Report. However, a full discussion of all the evaluative techniques, their development, and use would comprise a major document in itself.

Evaluation in curriculum projects should be formative as well as summative. Before the Project began, the objectives, techniques, and proposed products were subjected to evaluation techniques. The Project Director had developed the basic ideas over a number of years of teaching. However, in the course of constructing the proposal, a systematic evaluation of these objectives was conducted with numerous college string education teachers in Illinois plus selected public school teachers within and without the state.

The Director astutely collected an impressive and varied staff to aid in formative evaluation. Over the course of the Project this staff consisted of a communications expert with some knowledge and interest in string playing, a young concert violinist (a former assistant concertmaster from the Cleveland Symphony and prize winner at the Brussells competition while on the staff), and a distinguished staff of music educators and applied teachers from the university staff. Portions of this staff spent several months evaluating the choice of topics and sequence of films. In addition, weekly meetings were held to aid in structuring accompanying materials and determining grade levels and appropriate language for the musical and written examples.

Following the staff evaluation of Project goals and procedures and the mail and telephone solicitation of opinions on selected problems, a major evaluation endeavor was conducted with the calling of the first conference with consultants. The purpose of this meeting was to obtain reactions to Project procedures formulated to date, to evaluate a model film which had been hurridly completed and which was based on the teaching of Project objectives with selected students in attendance at Illinois Summer Youth Music, and to evaluate a film and the concepts of Katò Havas, a noted European violin teacher and a former colleague of the Project Director in his student days, whose methods are similar and who has been awarded much acclaim. A report of the Havas film is included in Chapter Three of this Report. The conference, held on the Urbana campus November 20-22, 1966, served a two-fold purpose: to evaluate the Project proposals and to solicit additional ideas from the experts that might be useful in formulating the complete package of materials that would eventually comprise the University of Illinois String Research Project. This evaluation and the second conference with consultants, June 8-9, 1968, are reported in Chapter Seven.

The evaluation in the Project was not of sufficient scope to be able to specify what activity or what material produced certain positive results evidenced by the performance of the young musicians. The rationale was that the Project should be weighted with as many good ideas and techniques of string teaching as possible in order to have reasonable assurance that string instruction will be improved as a result of this research project. If one can show evidence of educational change in a short span of time, the Project has been a success. It is a relatively simple job, then, to factor out the variables to identify the causative ones. The use of several centers and a variety of teaching methods provided controls of a sort that ruled out much of what is known as the "Hawthorne effect," the effect of the personality of the Project Director, or that of selected teachers and other noncontent factors. Hopefully, these are pointed out in the course of this chapter. Effective teaching is seldom the result of one isolated item but rather an interaction of several factors assembled in a skillful manner in a productive setting. The quantity of materials generated in this Project and the variety of their use can provide future researchers ample data for determining those which contributed most to successful string teaching and learning.

Specific Evaluation Procedures

The regular visits to the Project centers enabled the staff to gather data on some of the "spin off" values of the Project as well as the primary objectives. Students might enjoy the string instrument, might improve practice habits, might be significantly better or worse on objectives indirectly related to the Project. The vast quantity of data is not completely treated here to avoid repetition. Yet the most important evaluative aspects are indicated.

Film Evaluation

The major visible outcome of the Project was the production, during a three-year period, of a film series containing seventeen different titles. Evaluation of these can be approached from several points. A technical evaluation, whereby the films are rated on their quality of construction by experts in the film industry, was not conducted in this Project. Other evaluations include student evaluation, teacher evaluation (public school and collegiate), and that of professional musicians. In addition each can be evaluated on content, interest, level, pedagogy, pacing, effect upon the student, and so on, each of which can be approached by a variety of techniques. For example, teacher interest in the films may be reflected in the way and amount of usage as well as by direct and indirect questions to the teachers. Twenty-two teachers were considered Project participants in terms of having an opportunity to show films.

Because of circumstances, Project films were not completed in the planned pedagogical order, and the Motion Picture Service did not meet production schedules. At the end of the two-year trial period and one-year preparation period, not all films had been delivered. Thus, several interpretations can be made with respect to data on actual film usage in the public schools.

The range of showings among the twenty-two teachers was from two films to fifteen. There was no correlation between the better classes (better in terms of performance evaluation) and the number of films shown. The majority of teachers showed approximately one-half of the films produced. Some schools did not show any of the films more than once, but five of the twenty-two teachers consistently showed each film at least twice. However, the films were not the only medium to explain the "Action Studies" of the Project: the teachers manuals, wall charts,and curriculum guide also helped to explicate and clarify.

An exact count of the "Action Studies" used by each teacher is also subject to error. One teacher indicated 112 Action Studies introduced and another only 12. Interestingly enough, the teacher who showed the most films (15) introduced the fewest Action Studies. Most schools used between 50 and 60 Action Studies, with no more than six schools indicating completion of any one Action Study. The number of Action Studies completed by these six schools ranged from a high of nine to a low of five. Since the films were not shown in any specified order, comments cannot be made about pedagogical sequencing.

Film review questionnaires were submitted to the teachers in order to determine their usability. Most teachers felt that the films should be shown after the material was presented. The films were seen as a positive factor of motivation. With respect to whether or not the individual's comprehension was improved by the film, 29 replies indicated the choice "much improved," 35 indicated "somewhat improved," and 0 showed "not at all." The consensus, if there was any, seemingly was that repeated showings did aid the student and that they could be shown as low as fourth grade. The more advanced films received less favorable comments but reaction was still positive. For example, the film "Establishing Left Hand and Finger Placement in First Position" was one which did not receive one "much improved" rating. (This film was later revised and greatly improved.) Nevertheless, many teachers were very enthusiastic about the films and felt their students were much improved by the viewing of the films. Unfortunately, responses were not completed by all centers nor did any center report on all of the films. Therefore, a more accurate report cannot be given on the effectiveness of the films in public school usage. The films are sufficiently complex that one cannot absorb all the subtleties in one or two viewings. Teachers were continually solicited for comments but they were reluctant to comment on specific technical aspects or specific uses. In fact, few complete returns were received from teachers despite efforts for two consecutive years.

Table 4 presents tabulations of replies concerning fourteen films.

TABLE 4

TABULATION OF FILM SURVEYS

		Remedial Teaching (2 replies)	Establishing the Violin Hold (Part I) (10 replies)	Establishing the Violin Hold (Part II) (10 replies)	Holding the Violin Bow (6 replies)
1. Was initial showing of the film made before or after presentation of problem?	Before	0	0	0	2
	After	2	10	9	4
2. Grade level of students involved:	3rd	1	3	1	2
	4th	2	5	6	1
	5th	2	4	4	1
	6th	1	2	3	1
	7th & above	1	0	0	0
3. Was individual comprehension improved by the film? If so, to what degree?	much improved	1	5	4	4
	somewhat improved	1	5	5	2
	not at all	0	0	0	0
4. Does the film appear to have a stimulating and motivating effect on the students?	yes	2	10	8	6
	no	0	0	0	0
	don't know	0	0	0	0
5. How many showings of this film did each student see?	one	2	3	3	2
	two	0	4	4	2
	three or more	0	3	2	2
6. Did repeated showings aid the student?	yes	0	7	6	4
	no	0	0	0	0
7. Films were shown to:	entire control group	2	8	6	3
	individual class	0	2	3	3

TABLE 4--Continued

		Playing at the Middle (5 replies)	Principles of Left Hand & Finger Action (4 replies)	Establishing L. H. & Finger Placement in 1st Position (10 replies)	Bouncing the Bow (6 replies)
1. Was initial showing of the film made before or after presentation of problem?	Before	0	0	0	4
	After	5	4	10	2
2. Grade level of students involved:	3rd	1	1	1	1
	4th	3	1	7	5
	5th	2	2	5	3
	6th	2	1	2	2
	7th & above	0	0	1	0
3. Was individual comprehension improved by the film? If so, to what degree?	much improved	1	2	2	2
	somewhat improved	3	2	8	4
	not at all	0	0	0	0
4. Does the film appear to have a stimulating and motivating effect on the students?	yes	5	4	10	5
	no	0	0	0	1
	don't know	0	0	0	0
5. How many showings of this film did each student see?	one	1	4	4	3
	two	3	0	4	3
	three or more	1	0	2	0
6. Did repeated showings aid the student?	yes	4	0	5	3
	no	0	0	1	0
7. Films were shown to:	entire control group	4	2	4	3
	individual class	1	2	6	3

TABLE 4--Continued

		Extending the Bow Stroke (Part I) (3 replies)	Extending the Bow Stroke (Part II) (1 reply)	Developing Finger Movement (2 replies)
1. Was initial showing of the film made before or after presentation of problem?	Before	0	0	0
	After	3	1	2
2. Grade level of students involved:	3rd	1	0	0
	4th	2	1	1
	5th	1	1	2
	6th	0	0	0
	7th & above	0	0	0
3. Was individual comprehension improved by the film? If so, to what degree?	much improved	1	1	1
	somewhat improved	2	0	0
	not at all	0	0	0
4. Does the film appear to have a stimulating and motivating effect on the students?	yes	2	1	1
	no	1	0	0
	don't know	0	0	0
5. How many showings of this film did each student see?	one	1	0	1
	two	0	1	0
	three or more	2	0	1
6. Did repeated showings aid the student?	yes	2	1	1
	no	0	0	0
7. Films were shown to:	entire control group	3	1	1
	individual class	0	0	0

TABLE 4--Continued

		Martelé and Staccato (3 replies)	Developing Flexibility (2 replies)	Basic Shifting Movements (3 replies)
1. Was initial showing of the film made before or after presentation of problem?	Before	0	0	2
	After	3	2	1
2. Grade level of students involved:	3rd	0	1	1
	4th	1	1	1
	5th	2	1	2
	6th	0	0	0
	7th & above	1	0	0
3. Was individual comprehension improved by the film? If so, to what degree?	much improved	2	0	3
	somewhat improved	2	1	0
	not at all	0	0	0
4. Does the film appear to have a stimulating and motivating effect on the students?	yes	3	2	3
	no	0	0	0
	don't know	0	0	0
5. How many showings of this film did each student see?	one	1	0	1
	two	1	0	1
	three or more	1	2	1
6. Did repeated showings aid the student?	yes	2	2	2
	no	0	0	0
7. Films were shown to:	entire control group	2	2	3
	individual class	1	0	0

The effectiveness of the films was neither proved nor disproved in the trial phase of the Project. At this point the best evaluation of the films as a potential aid to string teaching and as to acceptance by the profession can be found in teacher comments, both within and without the Project. This phase of the Project evaluation, designed to take advantage of the national visibility of the Project Director, was the showing of one or more films through the country at clinics, workshops, and conventions. An evaluation form was designed to gather string teacher responses. This evaluation is presented in Chapter Twelve.

Evaluation Tools, 1967-68

Form 1, Appendix C, was designed primarily to accustom the student to evaluation as a part of string instruction and also to provide valuable initial information to the staff. It served also as a preliminary check on how materials were being used.

Another form gathered specific data from parents. This had use as a validity check on teacher-gathered data and as a method of obtaining information on practice habits and interests, one of the most important parts of instrumental learning. A tabulation follows.

PARENT QUESTIONNAIRE

Responses from thirteen schools, codes 2, 8, 9, 10, 11, 12, 13, 14, 15, 17, 19, 21, 22.

What is your child's attitude toward playing the violin?

a. Likes it very much -- 54
b. Thinks it is all right -- 17
c. Shows no feeling towards it -- 2
d. Dislikes it -- 2

On the average how much does your child practice each week?

a. 0-1 hour -- 17
b. 1-2 hours -- 16
c. 2-3 hours -- 18
d. 3 or more hours -- 23

Does he practice willingly?

Yes -- 63
No -- 11

Does he practice on a set schedule?

Yes -- 14
No -- 61

Does your child practice in front of a mirror?

a. Never -- 34
b. Occasionally -- 32
c. Often -- 9

Is a record player available for your child to use in his home practice?

Yes -- 63
No -- 6

Does your child practice mostly tunes, exercises, or both?

a. Tunes -- 18
b. Exercises -- 0
c. Both -- 52

Does he sit, stand, or both when he practices?

a. Sit -- 17
b. Stand -- 29
c. Both -- 28

Does he use music?

- a. Always -- 17
- b. Part of the time -- 56
- c. Never -- 2

Does your child have a violin with tuners on each string?

Yes -- 49
No -- 26

Does your child have a shoulder pad?

Yes -- 32
No -- 39

What materials does your child use in his home practice?

	Lots	Some	None
a. Records	15	48	4
b. Sight Reading Materials	4	24	29
c. Rhythm Games	13	41	8
d. Tunes for the String Player	38	21	3
e. Regular Method Book	27	23	9
f. Scales	11	33	12
g. Orchestra music	17	25	16

Does your child have a music stand?

Yes -- 49
No -- 22

Was the violin purchased or rented?

Purchased -- 25
Rented -- 42
Borrowed -- 5

Do you think your child has benefited from studying the violin this year?

Very much -- 42
Quite a bit -- 23
Some -- 7
Not at all -- 1

Do you think that his violin study has helped him to appreciate music more?

Yes -- 69
No -- 4

One evaluation technique attempted was to maintain a graph on each student involved in the Project. Positive and negative comments would be made about the student by a member of the Project staff at each visit. The assumption was that when no comment was made, the student was performing in an average manner. The size of the classes was sufficiently small for observations to be made on each student if necessary. However, by the end of the Project, the number of Action Studies was so large as to prevent meaningful data from this format. Each student might be observed on one to ten items at a visit with no consistent follow-through, although visits were made regularly.

Several principles were checked by different methods. For example, to determine whether the teacher was following Project principles, students were questioned on the relative emphases placed on certain subjects. In School Code 8 the students agreed that the teacher was giving proper emphasis to most items except mentioning stiffness in their knees when they played. This teacher also spent very little time helping the students to use the metal tuners. Average attention was given to the "Shuttle Game." This was one of the most conscientious teachers. A complete tabulation of student responses appears below. These were a part of the evaluation in the sense that the Project staff needed to know whether the materials were being given sufficient and proper use before later evaluation could be interpreted.

STUDENT QUESTIONNAIRE - 1967-68

Eleven of the participating schools responded.

1. When you were first learning to play the violin, were you shown how to play pizzicato or how to pluck the strings with your left hand?

School Code	Yes	No
2	7	0
8	9	1
9	6	2
10	10	0
11	5	4
12	10	2
13	7	6
14	11	0
15	7	0
17	10	1
22	5	0
	87	16

2. Has your teacher emphasized how to stand; where to place your feet?

School Code	Yes	No
2	7	0
8	9	1
9	8	0
10	10	0
11	9	0
12	12	0
13	13	0
14	11	0
15	7	0
17	11	0
22	5	0
	102	1

3. Has he talked about what to do with your knees when you play?

School Code	Yes	No
2	2	5
8	5	5
9	3	5
10	5	4
11	7	2
12	7	4
13	4	9
14	10	0
15	6	1
17	0	11
22	1	4
	50	50

4. How often do you tune your own violin using the small metal tuners?

School Code	Lots	Some	Little	Never
2	2	2	1	2
8	6	2	2	0
9	3	3	2	0
10	3	3	4	0
11	0	3	4	2
12	1	0	4	7
13	0	0	0	13
14	10	0	0	0
15	4	1	2	0
17	0	5	0	6
22	4	1	0	0
	33	20	19	30

5. Do you play with your violin in rest position?

School Code	Lots	Some	Little	Never
2	1	4	2	0
8	1	7	1	1
9	2	2	4	0
10	4	5	1	0
11	2	4	1	2
12	3	2	2	4
13	7	2	2	1
14	2	6	1	1
15	1	5	1	0
17	2	6	2	1
22	1	3	1	0
	26	46	18	10

6. Does your teacher often help you with tuning using the small metal tuners?

School Code	Lots	Some	Little	Never
2	5	2	0	0
8	2	2	4	2
9	5	2	0	0
10	2	6	1	1
11	8	0	0	1
12	11	0	0	0
13	8	0	0	5
14	4	1	5	1
15	0	2	1	8
17	0	2	1	8
22	4	1	0	0
	51	21	11	18

7. Has your teacher spent much time in showing you how to tune using the pegs?

School Code	Lots	Some	Little	Never
2	0	1	2	4
8	0	1	2	7
9	0	0	0	6
10	0	2	5	3
11	0	0	1	8
12	0	2	8	2
13	0	0	0	13
14	9	2	0	0
15	1	3	2	1
17	3	2	4	2
22	0	0	0	5
	13	13	24	51

8. Do you tune using the pegs much?

School Code	Lots	Some	Little	Never
2	0	0	0	7
8	1	1	3	5
9	0	0	0	8
10	0	1	3	6
11	0	0	0	9
12	1	0	4	7
13	0	1	0	12
14	10	1	0	0
15	0	2	4	1
17	3	2	2	4
22	0	0	0	5
	15	8	16	64

9. Do you remember doing the shuttle game (practice shifting) in class?

School Code	Lots	Some	Little	Never
2	4	3	0	0
8	4	5	1	0
9	7	1	0	0
10	8	2	0	0
11	6	3	0	0
12	5	2	3	2
13	5	3	4	0
14	8	3	0	0
15	5	1	1	0
17	6	5	0	0
22	4	1	0	0
	62	29	9	2

10. Do you practice this at home?

School Code	Yes	No
2	7	0
8	8	2
9	7	1
10	9	1
11	8	1
12	8	3
13	12	1
14	9	1
15	7	0
17	10	1
22	4	1
	89	12

11. Do you know what is meant by the left arm swing? Do you know what is meant by plucking on high and low strings in turn (alternately)?

School Code	Student Understands	Confused	Doesn't Know
2	7	0	0
8	7	1	2
9	8	0	0
11	7	2	0
12	5	4	2
13	3	3	6
14	11	0	0
15	7	0	0
17	3	0	8
22	0	1	4
	58	11	22

12. How often do you practice the "statue of liberty" game?

School Code	Lots	Some	Little	Never heard of it
2	1	5	1	0
8	3	5	2	0
9	2	4	2	0
10	6	3	1	0
11	1	6	2	0
12	6	1	3	0
13	11	1	0	0
14	6	4	0	7
15	0	0	0	7
17	1	1	0	9
22	2	0	1	2
	39	31	12	25

13. Do you sometimes practice holding the violin using your head to support it rather than your hands?

School Code	Yes	No
2	6	1
8	10	0
9	8	0
10	9	0
11	9	0
12	11	0
13	13	0
14	10	0
15	7	0
17	10	1
22	5	0
	98	2

14. Have you ever heard of the case walk? (Walking to music carrying the violin case over your head)

School Code	Yes	No
2	7	0
8	10	0
9	8	0
10	7	3
11	9	0
12	12	0
13	13	0
14	7	2
15	7	0
17	11	0
22	3	2
	94	7

15. Did you use a dowel stick or a pencil as a make believe bow when you were first learning to hold the bow?

School Code	Yes	No
2	7	0
8	10	0
9	8	0
10	10	0
11	2	7
12	8	4
13	1	12
14	9	2
15	7	0
17	7	4
22	2	3
	71	32

16. What is shadow bowing?

School Code	Student Knows	Confused	Doesn't Know
2	7	0	0
8	4	1	5
9	0	1	7
10	6	2	2
11	0	1	7
12	9	1	1
13	12	0	1
14	10	0	0
15	4	3	0
17	1	0	10
22	5	0	0
	58	9	33

17. Is bowing on your shoulder something you practice?

School Code	Yes	No
2	5	2
8	9	1
9	6	1
10	10	0
11	2	7
12	12	0
13	11	1
14	9	1
15	7	0
17	9	2
22	5	0
	85	15

18. Do you know how to rock the bow?

School Code	Yes	No
2	7	0
8	9	1
9	8	0
10	9	1
11	9	0
12	11	1
13	13	0
14	11	0
15	1	6
17	9	2
22	5	0
	92	11

19. How often do you practice this?

School Code	Lots	Some	Little	Never
2	0	2	5	0
8	4	5	0	1
9	3	3	2	0
10	2	6	1	0
11	1	7	1	0
12	6	3	2	1
13	5	3	5	0
14	2	9	0	0
15	1	0	2	4
17	1	7	1	2
22	4	1	0	0
	29	46	19	8

20. What is an octave?

School Code	Student Knows	Confused	Doesn't Know
2	7	0	0
8	6	2	2
9	5	2	1
10	5	2	2
11	3	5	1
12	8	2	2
13	6	2	5
14	11	0	0
15	4	1	1
17	8	2	1
22	3	0	2
	66	18	17

21. Did you play octaves in class or was it more an assignment for home?

School Code	Class	Home	Both
2	7	4	0
8	8	1	0
9	6	1	1
10	7	1	0
11	9	1	0
12	11	10	0
13	9	3	0
14	8	6	0
15	5	0	0
17	8	2	0
22	4	2	0
	82	31	1

22. How often did you play in the first position?

School Code	Lots	Some	Little	Never
2	5	2	0	0
8	1	4	3	0
9	2	5	1	0
10	1	5	2	0
11	2	6	1	0
12	6	4	2	0
13	3	5	1	3
14	6	5	0	0
15	2	4	1	0
17	1	2	1	6
22	2	3	0	0
	31	45	12	9

23. In fifth position?

School Code	Lots	Some	Little	Never
2	1	5	0	0
8	1	2	0	5
9	2	2	2	1
10	0	1	0	7
11	0	2	4	2
12	1	2	2	7
13	0	0	2	11
14	4	5	0	1
15	1	3	3	0
17	0	2	6	2
22	0	0	1	4
	10	22	20	40

24. Have you played octaves percussively (tapping with your left hand finger and not using the bow)?

School Code	Yes	No
2	6	1
8	5	3
9	8	0
10	6	3
11	5	4
12	5	7
13	10	3
14	4	7
15	5	2
17	8	2
22	3	2
	65	34

25. About how many films on the violin have you seen?

School Code	Average
2	6
8	6
9	3
10	4
11	3
12	3
13	5
14	4
15	5
17	4
22	3
	46

26. What do you remember about them?

School Code	Student Knows	Confused	Doesn't Know
2	7	0	0
8	10	0	0
9	7	1	0
10	8	0	0
11	8	0	1
12	11	0	1
13	10	1	2
14	8	0	1
15	6	1	0
17	11	0	0
22	5	0	0
	91	3	5

27. Do you remember moving the bow silently between the frog, middle, and tip?

School Code	Yes	No
2	6	1
8	9	1
9	3	5
10	9	1
11	9	0
12	3	9
13	4	9
14	11	0
15	2	5
17	10	1
22	2	3
	68	35

28. Do you practice bowing at the bow tip?

School Code	Lots	Some	Little	Never
2	3	4	0	0
8	2	4	3	1
9	1	4	3	0
10	1	6	3	0
11	0	3	6	0
12	3	3	6	0
13	2	5	6	0
14	3	6	2	0
15	0	5	2	0
17	1	7	2	1
22	1	4	0	0
	17	51	33	2

Do you practice bowing at the middle?

School Code	Lots	Some	Little	Never
2	4	2	0	0
8	7	2	1	0
9	6	2	0	0
10	9	1	0	0
11	6	3	0	0
12	10	1	1	0
13	7	3	2	1
14	9	0	2	0
15	4	2	1	0
17	6	3	2	0
22	5	0	0	0
	73	19	9	1

Do you practice bowing at the frog?

School Code	Lots	Some	Little	Never
2	2	4	0	0
8	2	5	2	1
9	3	2	3	0
10	4	3	2	1
11	5	4	0	0
12	3	4	4	1
13	4	4	4	1
14	3	6	2	0
15	1	2	4	0
17	4	6	1	0
22	1	4	0	0
	32	44	22	4

29. Do you play a whole piece at one part of the bow?

School Code	Lots	Some	Little	Never
2	1	2	2	1
8	1	5	1	2
9	2	5	0	1
10	1	5	3	1
11	6	3	0	0
12	4	4	2	2
13	4	3	0	6
14	1	3	6	1
15	0	1	4	2
17	1	3	1	6
22	1	2	2	0
	22	36	21	22

30. Do you bow working your way from the frog to the tip?

School Code	Lots	Some	Little	Never
2	0	2	4	1
8	1	7	0	1
9	1	4	0	2
10	0	8	0	1
11	1	3	4	1
12	2	4	2	4
13	0	4	2	7
14	0	6	2	3
15	0	0	1	6
17	5	2	3	0
22	1	4	0	0
	11	44	18	26

31. How often do you remember doing this?

School Code	Lots	Some	Little	Never
2	0	2	4	1
8	2	3	2	1
9	0	5	1	2
10	0	2	2	0
11	2	1	5	1
12	2	4	2	4
13	0	4	2	7
14	0	6	2	3
15	0	0	1	6
17	1	2	0	0
22	1	4	0	0
	8	33	21	25

32. Did you practice swinging your arms, stepping from side to side, or swinging the violin case when you work on long bow strokes?

School Code	Yes	No
2	6	1
8	6	4
9	3	5
10	8	2
11	5	4
12	11	1
13	9	4
14	11	0
15	6	1
17	4	7
22	4	1
	73	30

33. What is "fly pizzicato?"

School Code	Student Understands	Confused	Doesn't Know
2	7	0	0
8	5	0	5
9	7	0	1
10	0	0	10
11	8	0	1
12	0	0	12
13	0	0	13
14	11	0	0
15	4	0	3
17	2	1	8
22	0	0	5
	44	1	58

34. What part of your body moves when you play long strokes with the bow?

School Code	Student Understands	Confused	Doesn't Know
2	5	1	1
8	5	4	1
9	5	2	1
10	4	5	0
11	4	9	0
12	7	4	1
13	10	3	0
14	10	0	0
15	3	1	3
17	6	4	1
22	2	1	2
	61	34	10

35. When playing fast strokes with the bow, does your body move in the direction of the bow or away from the bow?

School Code	In Direction	Away From	Doesn't Know
2	0	3	4
8	5	5	0
9	2	4	2
10	1	8	1
11	1	7	1
12	2	2	8
13	5	6	2
14	0	9	2
15	2	5	0
17	1	10	0
22	0	5	0
	19	64	20

36. Do you practice long bow strokes with tunes?

School Code	Yes	No
2	7	0
8	8	2
9	6	2
10	9	1
11	8	1
12	9	3
13	9	4
14	8	2
15	7	0
17	8	3
22	5	0
	84	18

37. Which tunes?

School Code	Student Understands	Confused	Doesn't Know
2	7	0	0
8	2	2	3
9	4	1	1
10	4	3	3
11	6	2	1
12	6	1	3
13	8	0	2
14	0	2	6
15	3	2	2
17	6	0	4
22	1	2	2
	47	15	27

38. Have you bounced the bow on the string?

School Code	Yes	No
2	7	0
8	10	0
9	8	0
10	8	2
11	9	0
12	10	2
13	12	1
14	11	0
15	7	0
17	11	0
22	4	1
	97	6

39. What is this called?

School Code	Student Understands	Confused	Doesn't Know
2	0	0	7
8	0	0	10
9	2	1	5
10	2	1	7
11	3	0	6
12	0	0	10
13	0	3	9
14	10	0	1
15	3	2	2
17	3	4	4
22	0	0	5
	23	11	66

40. Did you read rhythms from the book of rhythm games?

School Code	Yes	No	Can't Remember
2	6	0	1
8	10	0	0
9	7	1	0
10	4	1	2
11	7	1	1
12	9	1	2
13	12	1	0
14	11	0	0
15	0	4	0
17	10	1	0
22	1	4	0
	77	14	6

41. Do you do this often?

School Code	Lots	Some	Little	Never
2	3	2	1	0
8	6	4	0	0
9	1	3	3	0
10	0	4	1	1
11	6	1	2	0
12	2	6	1	1
13	2	6	4	1
14	3	6	2	0
15	0	0	0	4
17	1	7	2	1
22	0	0	2	3
	24	39	18	11

42. Do you use these at home or school or both?

School Code	Home	School	Both
2	0	2	5
8	0	0	10
9	3	0	4
10	1	0	4
11	1	1	7
12	1	1	7
13	1	5	6
14	0	2	9
15	0	0	0
17	0	1	9
22	0	1	0
	7	13	61

43. Do you do these rhythm games in school? Clapping

School Code	Lots	Some	Little	Never	With Music	Without Music
2	3	2	2	0	6	6
8	5	4	1	0	8	3
9	3	3	2	0	6	2
10	0	5	1	4	2	5
11	0	3	4	2	3	6
12	6	4	2	0	9	10
13	1	9	2	1	10	10
14	1	8	2	0	9	5
15	3	4	0	0	7	1
17	4	6	1	0	9	3
22	1	2	2	0	0	1
	27	50	19	7	69	52

Stepping

School Code	Lots	Some	Little	Never	With Music	Without Music
2	0	6	1	0	7	1
8	2	5	2	0	8	2
9	2	4	2	0	6	1
10	0	7	1	2	5	2
11	0	0	3	6	3	6
12	1	8	3	0	10	9
13	3	6	3	1	9	9
14	0	3	3	5	6	1
15	2	4	1	0	7	0
17	2	4	2	3	5	4
22	0	1	3	1	0	1
	12	48	24	18	66	36

Waving (conducting)

School Code	Lots	Some	Little	Never	With Music	Without Music
2	0	1	2	4	3	0
8	1	3	4	0	7	3
9	3	2	0	3	4	1
10	0	3	4	2	3	2
11	0	0	1	8	1	8
12	1	3	3	5	5	6
13	2	5	3	3	8	3
14	0	0	1	9	2	0
15	1	0	3	3	3	0
17	0	1	3	7	3	2
22	0	0	3	2	0	1
	8	18	27	46	39	26

Tapping on the violin

School Code	Lots	Some	Little	Never	With Music	Without Music
2	2	5	0	0	4	7
8	3	4	1	0	4	5
9	6	2	0	0	0	7
10	6	3	0	0	0	7
11	0	2	2	5	2	7
12	7	4	1	0	8	10
13	3	7	3	0	6	11
14	1	8	0	2	3	5
15	1	3	1	2	2	3
17	2	8	1	0	5	6
22	4	1	0	0	0	4
	35	47	9	9	34	72

Right hand pizzicato

School Code	Lots	Some	Little	Never	With Music	Without Music
2	1	4	2	0	6	1
8	4	3	0	2	4	3
9	3	1	3	1	3	3
10	2	5	0	2	2	1
11	0	4	0	4	3	6
12	1	5	4	2	7	6
13	10	2	1	0	11	9
14	0	9	0	1	6	3
15	1	4	1	1	5	1
17	7	3	1	0	9	3
22	4	1	0	0	1	3
	33	41	12	13	57	39

Regular bowing

School Code	Lots	Some	Little	Never	With Music	Without Music
2	1	4	1	1	1	6
8	5	3	0	0	4	2
9	5	1	1	1	4	4
10	4	6	0	0	3	1
11	9	0	0	0	3	6
12	5	6	1	0	9	10
13	9	3	0	1	10	8
14	4	7	0	1	7	5
15	2	3	2	0	6	1
17	6	4	1	0	8	4
22	5	0	0	0	1	0
	55	37	6	4	56	47

Tongue clicking

School Code	Lots	Some	Little	Never	With Music	Without Music
2	0	0	1	6	1	0
8	2	2	4	1	6	3
9	2	0	3	3	1	5
10	0	3	2	5	2	2
11	0	1	4	4	1	8
12	0	0	1	10	0	0
13	0	1	0	11	0	0
14	0	0	0	10	0	0
15	0	1	2	4	1	1
17	0	0	0	11	0	0
22	0	1	0	4	0	0
	4	9	17	69	12	19

44. Did you ever use someone's name as a rhythm and play this rhythm on your violin?

School Code	Yes	No
2	7	0
8	8	2
9	8	0
10	9	0
11	6	3
12	12	0
13	12	1
14	10	1
15	7	0
17	0	11
22	5	0
	84	18

45. Do you remember tapping on your violin?

School Code	Yes	No
2	7	0
8	5	2
9	8	0
10	10	0
11	4	5
12	12	0
13	13	0
14	11	0
15	6	1
17	10	1
22	5	0
	91	9

46. Did you tap word and name rhythms on your violin?

School Code	Yes	No
2	7	0
8	7	3
9	5	3
10	6	4
11	4	5
12	11	1
13	11	2
14	11	0
15	6	1
17	1	10
22	1	4
	70	33

DEMONSTRATIONS

1. Show me how you do the shuttle game. Does he strum with the 3rd or 4th fingers?

School Code	Yes	No
2	7	0
8	7	2
9	6	1
10	6	4
11	3	6
12	8	2
13	11	1
14	10	1
15	5	2
17	0	5
22	5	0
	68	24

Does he shift between the limits of the first and fifth positions while still plucking?

School Code	Yes	No
2	6	1
8	9	0
9	5	2
10	10	0
11	7	2
12	9	1
13	12	0
14	10	1
15	3	4
17	1	5
22	2	1
	74	17

2. Can you do the left arm swing for me?

School Code	Yes	No
2	7	0
8	2	2
9	6	2
10	9	0
11	7	2
12	6	4
13	3	6
14	10	0
15	7	0
17	2	3
22	0	4
	59	23

Does he pluck alternately on the low and high strings?

School Code	Yes	No
2	7	0
8	4	2
9	6	0
10	5	4
11	2	6
12	6	0
13	3	1
14	11	0
15	6	1
17	2	0
22	0	3
	52	17

Are the fingers over the marker?

School Code	Yes	No
2	5	2
8	4	0
9	6	0
10	10	0
11	6	2
12	6	0
13	4	0
14	10	1
15	1	1
17	0	2
22	0	3
	52	11

3. Take your time and show me how you hold your bow.
(Student was photographed.)

4. Can you do the place and lift game?

School Code	Yes	No
2	3	1
8	3	7
9	6	2
10	6	3
11	8	1
12	2	10
13	0	13
14	11	0
15	6	1
17	5	0
22	1	4
	51	42

5. Show me at the frog, middle, and tip. Are the fingers well-rounded?

School Code	Yes	No
2	5	1
8	6	4
9	6	2
10	5	4
11	1	8
12	0	3
13	0	0
14	11	0
15	4	3
17	0	5
22	5	0
	43	30

Is the bow kept at right angles to the string?

School Code	Yes	No
2	5	1
8	9	1
9	5	3
10	10	0
11	6	3
12	2	1
13	0	0
14	11	0
15	5	2
17	4	1
22	5	0
	62	12

6. Show me how you play strokes at the middle, tip, and frog. Is the bow moved at a right angle to the strings?

School Code	Yes	No
2	5	2
8	9	1
9	7	1
10	9	1
11	6	3
12	11	1
13	8	4
14	10	0
15	6	1
17	4	1
22	5	0
	80	15

7. What are your favorite tunes that you play?

Barcarolle	29
French Folk Song	29
Tschaikowsky, Theme from Symphony No. 4	15
Lightly Row	13
Mary Had a Little Lamb	12
Pop Goes the Weasel	12
Camptown Races	9
Hot Cross Buns	7
Row, Row, Row Your Boat	5
Old MacDonald	5
Twinkle, Twinkle Little Star	4
Jingle Bells	3
Swanee River	3
America	3
Daisy	3
On Top of Old Smoky	2
Jack and Jill	2
Oh Dear, What can the Matter Be?	1
America the Beautiful	1
Love is Blue	1
Lullaby	1
March Onward	1

8. Take your time and show me how you should hold the bow on the string. (Student was photographed.)

9. Take your time and assume a good left hand position. (Student was photographed.)

10. Play any four rhythms for me that you like out of the rhythm book.

School Code	Good	Fair	Poor
2	2	4	1
8	3	1	6
9	2	4	1
10	2	1	1
11	0	0	0
12	0	0	0
13	2	0	0
14	3	3	3
15	2	0	0
17	0	0	0
22	0	0	1
	16	13	13

11. Play some down bow strokes. Are the fingers curved as they hold the bow?

School Code	Yes	No
2	7	0
8	6	4
9	8	0
10	5	5
11	5	4
12	10	2
13	7	6
14	10	0
15	6	1
17	0	4
22	5	0
	69	26

Is the bow moved in a circular path (counterclockwise)?

School Code	Yes	No
2	0	7
8	5	3
9	5	3
10	7	3
11	6	3
12	12	0
13	10	3
14	10	0
15	5	2
17	3	1
22	3	2
	67	27

Are the movements curved?

School Code	Yes	No
2	6	0
8	5	4
9	5	3
10	6	4
11	6	3
12	12	0
13	12	1
14	9	1
15	5	2
17	3	1
22	2	3
	71	22

12. Play some up-bow strokes. Is the follow-through slightly arched upward?

School Code	Yes	No
2	7	0
8	6	4
9	6	0
10	8	2
11	4	5
12	10	1
13	10	3
14	4	6
15	6	1
17	2	1
22	4	1
	67	24

13. Play some slurred strokes crossing two strings for me. Is the bow at a right angle to the string?

School Code	Yes	No
2	6	1
8	9	1
9	6	2
10	8	1
11	7	2
12	8	4
13	0	0
14	9	1
15	7	0
17	4	0
22	1	4
	65	16

Does the elbow raise and lower with the change of string level?

School Code	Yes	No
2	2	5
8	9	1
9	4	4
10	8	1
11	9	0
12	8	4
13	0	0
14	7	2
15	1	6
17	4	0
22	1	4
	53	27

Project assistants who visited the trial classes completed the sheets designated as Form 2 in Appendix C. These reports were more methodological and than summative. Although the hope was that each teacher could use his individual approach to Project materials, the evaluation made it apparent that some teachers were not covering even minimum materials. The following guideline was established: if half of the materials of any one sequence were not covered, any evaluation of that teacher's students would not be a fair report of the success or failure of Project materials. Evaluation was still possible; however, it was not focused on the Project but became an evaluation of one teaching situation compared with another or by itself. The evaluation was of what the teacher used, rather than what should have been used. Because of the variances, any tabulation would have to be done school by school to be meaningful.

Project records indicated that the use of Project developed materials might heighten attitude, motivation, and interest in string playing. Also, reports from teachers on the film showings indicated that one of the primary advantages of the films might be to provide motivation for the student. Consequently, an effort was made to determine how playing the violin ranked with a student's other school subjects, and how interest in string instruction compared to interest in general music, band, and chorus. (The questionnaire is presented in Appendix C, Form 3.)

In School Code 8 two Project students ranked violin lowest and two ranked it highest. The mean rating was 61.43. Strings were rated higher than general music, band, or chorus.

In school 15 the low rating was 50 with a high of 95.5 and a surprising median of 95.4. Project classes were higher by approximately 20 points than non-Project string students in this school system. General music ranked low, as in all schools surveyed.

In school 17 the low interest in strings was 24.8, with a high of 96.2. Orchestra rated higher than band in this school. General music again ranked low.

In school 12 the range was 59.1 to 96.2 with a median of 91.1. Non-Project students ranked string class slightly higher than band; with Project students there was no band comparison. In both groups string classes were favored.

In school 9 the low was 61.0 with a high of 96.2 and a median of 94.7, and students preferred orchestra over general music 88 to 36.

In school 2 the low was 75.9, high--98.4, and a median--94.2. Project students ranked strings very high, 92.11, as compared with 37.35 among non-Project students. This school showed the greatest increase in student motivation through the use of Project materials.

School 19 had a low ranking of 65, a high of 95, and a median of 90. As there were only four students, these rankings are difficult to interpret. Orchestra was favored over general music among the Project students.

School 14 showed a low of 3.5 and a high of 95.5 with a median of 76.7. Only in this school was it possible for the students to take the Watkins-Farnum Performance Scale with any degree of success. At all other centers, the test was too difficult.

In school 13 Project strings rated 74.28, compared with a general music rating of 56.05.

A complete tabulation of range of scores (mean, low, median, and high) is shown in the following tables.

TABLE 5
COMPARISON OF INTEREST IN MUSIC SUBJECTS
MEAN SCORES

PROJECT STUDENTS	General Music	Strings	Band	Chorus
School Code 8	45.38	61.43	56.92	42.30
" " 15	43.84	80.28	-----	-----
" " 17	29.48	70.20	-----	-----
" " 12	44.65	84.49	-----	-----
" " 9	36.66	88.38	-----	-----
" " 2	40.92	92.11	-----	46.35
" " 19	57.50	85.00	-----	-----
" " 14	-----	65.34	-----	-----
" " 13	56.05	74.28	-----	-----

NONPROJECT STUDENTS	General Music	Strings	Band	Chorus
School Code 8	-----	-----	-----	-----
" " 15	48.48	58.02	61.15	-----
" " 17	31.67	76.00	65.75	-----
" " 12	45.21	85.80	82.83	55.57
" " 9	42.83	-----	51.11	-----
" " 2	45.22	37.35	38.18	35.31
" " 19	46.48	-----	-----	49.84
" " 14	39.56	53.87	51.91	47.09
" " 13	51.44	-----	-----	-----

TABLE 6
COMPARISON OF INTEREST IN MUSIC SUBJECTS
LOW, MEDIAN, AND HIGH SCORES

School Codes	Low	Median	High
8	2,7	83.2	96.7
15	50.0	95.4	95.5
17	24.8	73.1	96.2
12	59.1	91.1	96.2
9	61.0	94.7	96.2
2	75.9	94.2	98.4
19	65.0	90.0	95.0
14	3.5	76.7	95.5
13	29.0	78.8	95.4

TABLE 7
COMPARISON OF INTEREST IN GENERAL MUSIC

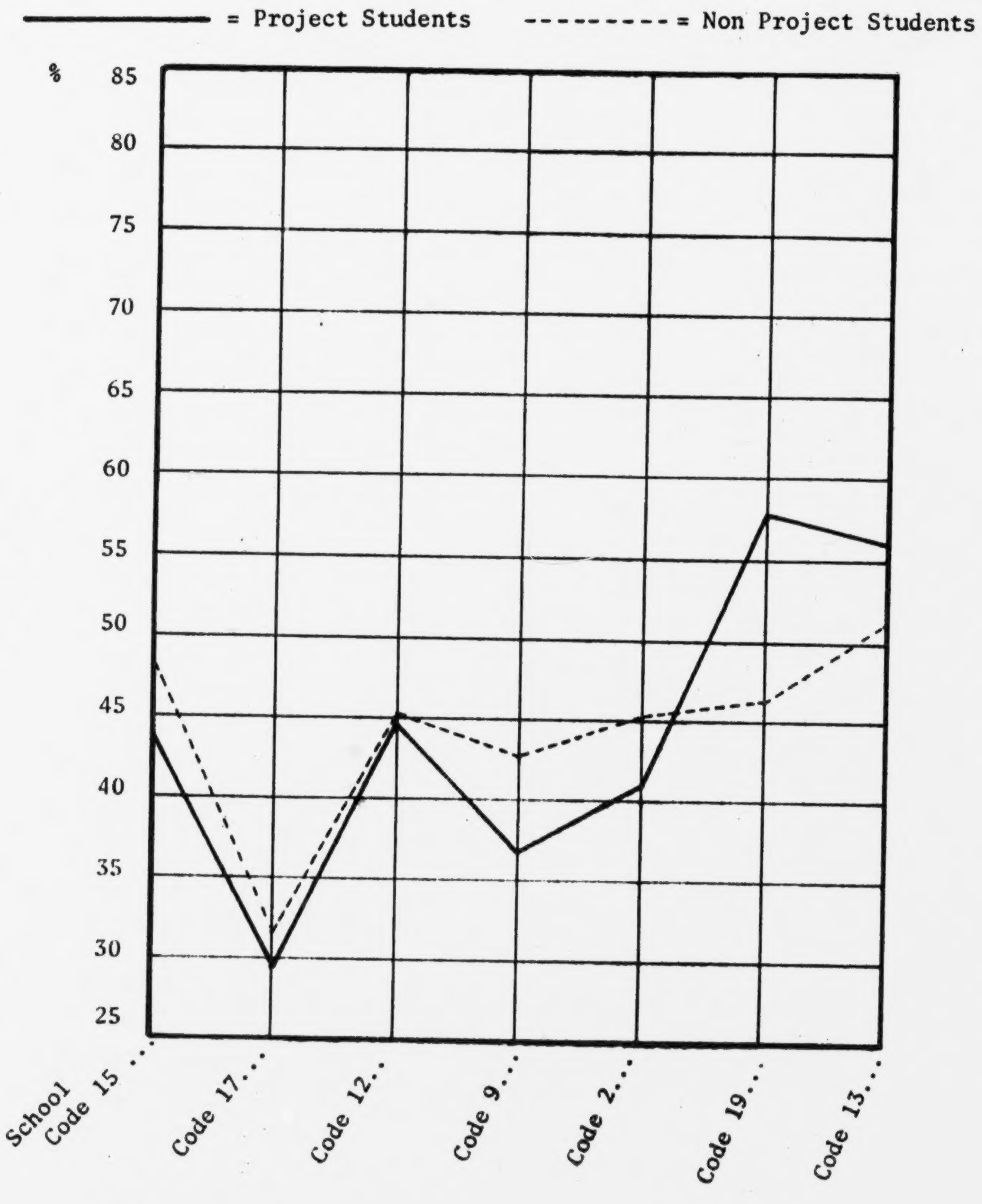
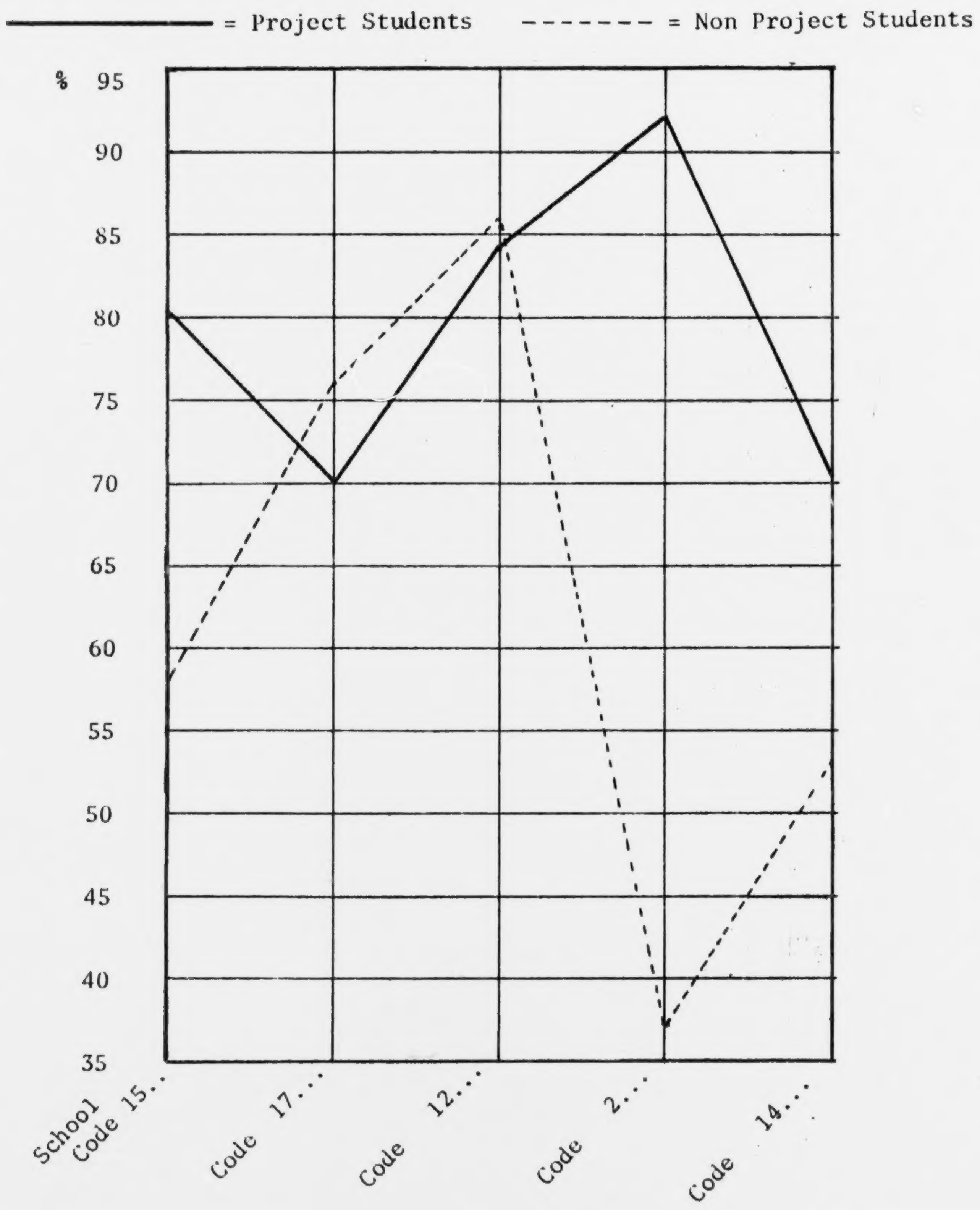


TABLE 8
COMPARISON OF INTEREST IN STRINGS



Prior to any summative evaluation at the end of the first-trial year, a form was submitted to the teachers to ascertain the amount of attention given to each Action Study during the entire year. Data were also gathered on tunes and method books used. A type of critical incidence test was included in the questionnaire. Teachers were asked what they considered the most significant part of the Project and what aspects were slowed by the Project. There was a general narrative question on how the students differed from previous years.

Unfortunately, some of the teachers were too busy to devote the required time to the Project. In some centers the use of materials was spotty in extent and depth and not all questionnaires were completed. Only four Project teachers completed this valuable questionnaire. No tabulation has been made of these, due to the unreliability and bias in such a small sample. The normal interpretation would be that those who returned the questionnaire used the Project materials more extensively than those who were not sufficiently motivated to reply. If this is true, it appears that some Project centers were involved in the Project only to take advantage of the many excellent materials the Project Director was producing--and at their discretion. The alternate argument that the good teachers were just too busy to complete questionnaires isn't supported by the evidence available. Following are the reports and evaluations of the five cooperating teachers who returned the forms.

ACTION QUESTIONNAIRE FOR COOPERATING TEACHERS
1967-68

Directions:

In order to be fair to the students, please answer the following questionnaire indicating whether you have been able to devote sufficient time that a fair evaluation of your student's ability is possible. For items not covered check last column (never).

The following list contains actions which were presented through the manuals and films. Please check appropriate box concerning the use and study of these actions.

Evaluation:

Replies were received from five teachers, codes 2, 8, 9, 12, and 17.

TOPICS AND SKILLS School Code 17	EVERY LESSON	REVIEW OFTEN	REVIEW FROM TIME TO TIME	SELDOM	NEVER
TUNING USING FINE TUNERS Rest position				X	
Regular position					X
TUNING USING THE PEGS					
Rest position			X		
Regular position		X			
Open fifths				X	
ESTABLISHING THE VIOLIN HOLD					
Case Walk			X		
Rest position		X			
Statue of Liberty Game			X		
Shuttle Game between 1st and 5th position			X		
Shuttle above fifth position				X	
Left arm swing		X			
Left hand pizzicato drills			X		
Accompany melodies with left hand pizzicato			X		

TOPICS AND SKILLS	EVERY LESSON	REVIEW OFTEN	REVIEW FROM TIME TO TIME	SELDOM	NEVER
Tapping games for better position and vibrato				X	
Holding the violin without using the hands				X	
ESTABLISHING LEFT HAND AND FINGER PLACEMENT					
Octave Game First position		X			
Fifth position			X		
Harmonics					X
First finger played percussively				X	
ESTABLISHING THE BOW HOLD					
Work with dowel stick or pencil when establishing bow hold				X	
Place and lift game		X			
High bow hold			X		
Shadow bowing			X		
Regular bow hold		X			
Rocking the bow			X		
Rolling the arm			X		
PLAYING AT THE MIDDLE OF THE BOW					
Short Strokes: At the Middle of the Bow			X		
At the frog			X		
At the tip			X		
Slurred strokes in string crossing			X		
Down bow strokes with rebound				X	
Up bow strokes with follow through				X	
Improve tone beginnings			X		

TOPICS AND SKILLS	EVERY LESSON	REVIEW OFTEN	REVIEW FROM TIME TO TIME	SELDOM	NEVER
Arched releases		X			
EXTENDING THE BOW STROKE			X		
Stance			X		
Weight transfer				X	
Full bow--singls strokes with return			X		
SPICCATO BOWING				X	
Silent bouncing with various rhythms				X	
Bouncing on open strings				X	
Fingered bouncing				X	
RHYTHM ACTIVITIES					
Clapping to music			X		
Tapping to music			X		
Stepping to music			X		
Left hand pizzicato			X		
Conducting				X	
Tapping on violin				X	
Right hand pizzicato		X			
Shadow bowing				X	
Regular bowing		X			
Tongue clicking				X	
NOTE READING		X			
Rhythm Games		X			
Sight Reading Materials					X
Music reading and spelling of notes on tune sheets			X		
Use of viola clef for violin students					X

Number the tunes in the approximate order of their use. Place a zero beside those not used.

1 Hot Cross Buns
6 Jingle Bells
2 Mary Had a Little Lamb
7 Theme from 4th Symphony
3 Lightly Row
4 Old MacDonald
0 French Folk Song
0 Pop Goes the Weasel
5 London Bridge
0 Camptown Races
0 Skip to My Lou

0 Row, Row, Row Your Boat
0 Barcarolle
0 Jack and Jill
0 O Dear
0 On Top of Old Smoky
0 America
0 Daisy
0 Swanee River
0 America the Beautiful
0 Joy to the World

If you are using a method book, how far have you progressed? Name of method: Applebaum-Belwin String Builder. Three-fourths of Book one completed.

Do your students sit, stand, or both? Both--mostly sit.

What would you consider the most significant part of the project?
Recordings and films.

Did some things go slower because of the project? If so, what.
Perhaps reading ability was slowed some. This was not the fault of the project material, however . . . instructor slow in assimilating new material and making efficient use of it.

At the end of one year in what way, if any, are your students different from any other year?
They are more enthusiastic about their music and their positions are generally better. There is always the chance, however, that these are more exceptional students than I am accustomed to having. Time will tell.

ACTION QUESTIONNAIRE FOR COOPERATING TEACHERS
1967-68

Directions:

In order to be fair to the students, please answer the following questionnaire indicating whether you have been able to devote sufficient time that a fair evaluation of your student's ability is possible. For items not covered check last column (never).

The following list contains actions which were presented through the manuals and films. Please check appropriate box concerning the use and study of these actions.

Evaluation:

Replies were received from five teachers, codes 2, 8, 9, 12, and 17.

TOPICS AND SKILLS School Code 2	EVERY LESSON	REVIEW OFTEN	REVIEW FROM TIME TO TIME	SELDOM	NEVER
TUNING USING FINE TUNERS Rest position				X	
Regular position	X				
TUNING USING THE PEGS					
Rest position					X
Regular position					X
Open fifths					X
ESTABLISHING THE VIOLIN HOLD					
Case Walk				X	
Rest position				X	
Statue of Liberty Game			X		
Shuttle Game between 1st and 5th position		X			
Shuttle above fifth position			X		
Left arm swing			X		
Left hand pizzicato drills		X			
Accompany melodies with left hand pizzicato		X			

TOPICS AND SKILLS	EVERY LESSON	REVIEW OFTEN	REVIEW FROM TIME TO TIME	SELDOM	NEVER
Tapping games for better position and vibrato		X			
Holding the violin without using the hands			X		
ESTABLISHING LEFT HAND AND FINGER PLACEMENT					
Octave Game First position		X			
Fifth position		X			
Harmonics		X			
First finger played percussively			X		
ESTABLISHING THE BOW HOLD				X	
Work with dowel stick or pencil when establishing bow hold			X		
Place and lift game			X		
High bow hold			X		
Shadow bowing			X		
Regular bow hold		X			
Rocking the bow		X			
Rolling the arm		X			
PLAYING AT THE MIDDLE OF THE BOW					
Short Strokes: At the Middle of the Bow		X			
At the frog		X			
At the tip		X			
Slurred strokes in string crossing		X			
Down bow strokes with rebound		X			
Up bow strokes with follow through		X			
Improve tone beginnings			X		

TOPICS AND SKILLS	EVERY LESSON	REVIEW OFTEN	REVIEW FROM TIME TO TIME	SELDOM	NEVER
Arched releases		X			
EXTENDING THE BOW STROKE		X			
Stance			X		
Weight transfer			X		
Full bow--singls strokes with return		X			
SPICCATO BOWING					
Silent bouncing with various rhythms			X		
Bouncing on open strings				X	
Fingered bouncing				X	
RHYTHM ACTIVITIES					
Clapping to music		X			
Tapping to music			X		
Stepping to music			X		
Left hand pizzicato		X			
Conducting					X
Tapping on violin		X			
Right hand pizzicato					X
Shadow bowing					
Regular bowing					X
Tongue clicking					X
NOTE READING		X			
Rhythm Games		X			
Sight Reading Materials					X
Music reading and spelling of notes on tune sheets					X
Use of viola clef for violin students					X

Number the tunes in the approximate order of their use. Place a zero beside those not used.

1 Hot Cross Buns
4 Jingle Bells
2 Mary Had a Little Lamb
9 Theme from 4th Symphony
5 Lightly Row
6 Old MacDonald
3 French Folk Song
7 Pop Goes the Weasel
8 London Bridge
17 Camptown Races
13 Skip to My Lou

11 Row, Row, Row Your Boat
10 Barcarolle
0 Jack and Jill
0 O Dear
0 On Top of Old Smoky
0 America
0 Daisy
0 Swanee River
0 America the Beautiful
0 Joy to the World

If you are using a method book, how far have you progresses? Name of method: Müller Rusch--Lesson 17

Do your students sit, stand, or both? Both

What would you consider the most significant part of the project?
The rote teaching of technique in a natural manner.

Did some things go slower because of the project? If so, what.
Note reading is a little slower.

At the end of one year in what way, if any, are your students different from any other year?
The students are more interested in the instrument. They know how to use it to the best advantage. They are not as concerned about the written page as my former students.

ACTION QUESTIONNAIRE FOR COOPERATING TEACHERS
1967-68

Directions:

In order to be fair to the students, please answer the following questionnaire indicating whether you have been able to devote sufficient time that a fair evaluation of your student's ability is possible. For items not covered check last column (never).

The following list contains actions which were presented through the manuals and films. Please check appropriate box concerning the use and study of these actions.

Evaluation:

Replies were received from five teachers, codes 2, 8, 9, 12, and 17.

TOPICS AND SKILLS School Code 9	EVERY LESSON	REVIEW OFTEN	REVIEW FROM TIME TO TIME	SELDOM	NEVER
TUNING USING FINE TUNERS Rest position				X	
Regular position	X				
TUNING USING THE PEGS					
Rest position					X
Regular position				X	
Open fifths			X		
ESTABLISHING THE VIOLIN HOLD					
Case Walk			X		
Rest position		X			
Statue of Liberty Game			X		
Shuttle Game between 1st and 5th position			X		
Shuttle above fifth position					
Left arm swing				X	
Left hand pizzicato drills			X		
Accompany melodies with left hand pizzicato				X	

TOPICS AND SKILLS	EVERY LESSON	REVIEW OFTEN	REVIEW FROM TIME TO TIME	SELDOM	NEVER
Tapping games for better position and vibrato		X			
Holding the violin without using the hands		X			
ESTABLISHING LEFT HAND AND FINGER PLACEMENT					
Octave Game First position		X			
Fifth position			X		
Harmonics			X		
First finger played percussively					X
ESTABLISHING THE BOW HOLD					
Work with dowel stick or pencil when establishing bow hold		X			
Place and lift game			X		
High bow hold		X			
Shadow bowing		X			
Regular bow hold	X				
Rocking the bow		X			
Rolling the arm		X			
PLAYING AT THE MIDDLE OF THE BOW					
Short Strokes: At the Middle of the Bow	X				
At the frog				X	
At the tip			X		
Slurred strokes in string crossing		X			
Down bow strokes with rebound		X			
Up bow strokes with follow through					X
Improve tone beginnings		X			

TOPICS AND SKILLS	EVERY LESSON	REVIEW OFTEN	REVIEW FROM TIME TO TIME	SELDOM	NEVER
Arched releases		X			
EXTENDING THE BOW STROKE					
Stance	. X				
Weight transfer		X			
Full bow--singls strokes with return		X			
SPICCATO BOWING					
Silent bouncing with various rhythms		X			
Bouncing on open strings		X			
Fingered bouncing		X			
RHYTHM ACTIVITIES					
Clapping to music			X		
Tapping to music				X	
Stepping to music		X			
Left hand pizzicato			X		
Conducting					X
Tapping on violin			X		
Right hand pizzicato		X			
Shadow bowing				X	
Regular bowing	X				
Tongue clicking			X		
NOTE READING				X	
Rhythm Games			X		
Sight Reading Materials			X		
Music reading and spelling of notes on tune sheets					X
Use of viola clef for violin students				X	

Number the tunes in the approximate order of their use. Place a zero beside those not used.

1 Hot Cross Buns

0 Jingle Bells

2 Mary Had a Little Lamb

8 Theme from 4th Symphony

5 Lightly Row

9 Old MacDonald

3 French Folk Song

0 Pop Goes the Weasel

0 London Bridge

0 Camptown Races

7 Skip to My Lou

0 Row, Row, Row Your Boat

4 Barcarolle

0 Jack and Jill

0 O Dear

6 On Top of Old Smoky

0 America

0 Daisy

0 Swanee River

0 America the Beautiful

0 Joy to the World

If you are using a method book, how far have you progressed? Name of method: None used.

Do your students sit, stand, or both? Stand

What would you consider the most significant part of the project?
Most significant in my opinion is the project's built in methods for establishing from the beginning correct positions and techniques with minimal static physical tensions.

Did some things go slower because of the project? If so, what.
Note reading

At the end of one year in what way, if any, are your students different from any other year?
They play with consistently good positions. Furthermore they bow with more freedom and more control at the same time. Finally, they play more consistently in time and have a deeper understanding of concepts (e.g. octave, fifth, first position, shart, etc.).

ACTION QUESTIONNAIRE FOR COOPERATING TEACHERS
1967-68

Directions:

In order to be fair to the students, please answer the following questionnaire indicating whether you have been able to devote sufficient time that a fair evaluation of your student's ability is possible. For items not covered check last column (never).

The following list contains actions which were presented through the manuals and films. Please check appropriate box concerning the use and study of these actions.

Evaluation:

Replies were received from five teachers, codes 2, 8, 9, 12, and 17.

TOPICS AND SKILLS School Code 8	EVERY LESSON	REVIEW OFTEN	REVIEW FROM TIME TO TIME	SELDOM	NEVER
TUNING USING FINE TUNERS Rest position	X				
Regular position					X
TUNING USING THE PEGS					
Rest position				X	
Regular position					X
Open fifths				X	
ESTABLISHING THE VIOLIN HOLD					
Case Walk			X		
Rest position	X				
Statue of Liberty Game			X		
Shuttle Game between 1st and 5th position	X				
Shuttle above fifth position					X
Left arm swing			X		
Left hand pizzicato drills	X				
Accompany melodies with left hand pizzicato	X				

TOPICS AND SKILLS	EVERY LESSON	REVIEW OFTEN	REVIEW FROM TIME TO TIME	SELDOM	NEVER
Tapping games for better position and vibrato		X			
Holding the violin without using the hands			X		
ESTABLISHING LEFT HAND AND FINGER PLACEMENT					
Octave Game First position		X			
Fifth position					
Harmonics		X			
First finger played percussively			X		
ESTABLISHING THE BOW HOLD				X	
Work with dowel stick or pencil when establishing bow hold		X			
Place and lift game		X			
High bow hold		X			
Shadow bowing				X	
Regular bow hold	X				
Rocking the bow	X				
Rolling the arm	X				
PLAYING AT THE MIDDLE OF THE BOW					
Short Strokes: At the Middle of the Bow		X			
At the frog			X		
At the tip			X		
Slurred strokes in string crossing		X			
Down bow strokes with rebound		X			
Up bow strokes with follow through		X			
Improve tone beginnings			X		

TOPICS AND SKILLS	EVERY LESSON	REVIEW OFTEN	REVIEW FROM TIME TO TIME	SELDOM	NEVER
Arched releases			X		
EXTENDING THE BOW STROKE					
Stance			X		
Weight transfer			X		
Full bow--singls strokes with return			X		
SPICCATO BOWING					
Silent bouncing with various rhythms	X				
Bouncing on open strings		X			
Fingered bouncing					X
RHYTHM ACTIVITIES					
Clapping to music		X			
Tapping to music				X	
Stepping to music			X		
Left hand pizzicato	X				
Conducting				X	
Tapping on violin		X			
Right hand pizzicato	X				
Shadow bowing					X
Regular bowing		X			
Tongue clicking		X			
NOTE READING					
Rhythm Games		X			
Sight Reading Materials		X			
Music reading and spelling of notes on tune sheets		X			
Use of viola clef for violin students		X			

Number the tunes in the approximate order of their use. Place a zero beside those not used.

1 Hot Cross Buns

4 Jingle Bells

2 Mary Had a Little Lamb

7 Theme from 4th Symphony

13 Lightly Row

10 Old MacDonald

3 French Folk Song

11 Pop Goes the Weasel

0 London Bridge

14 Camptown Races

9 Skip to My Lou

0 Row, Row, Row Your Boat

6 Barcarolle

0 Jack and Jill

0 O Dear

12 On Top of Old Smoky

0 America

0 Daisy

8 Swanee River

0 America the Beautiful

5 Joy to the World

If you are using a method book, how far have you progressed? Name of mehtod: None used.

Do your students sit, stand, or both? Stand

What would you consider the most significant part of the project?
Sequence of motion studies and films to portray this.

Did some things go slower because of the project? If so, what.
Perhaps intonation is slower. Much time is spent on motion and freedom.

At the end of one year in what way, if any, are your students different from any other year?
A very complete overall picture and experience of violin playing--pizzicato, bowing, shifting, harmonics. Feeling for and reading of various rhythms. Better posture. Greater freedom in bowing.

ACTION QUESTIONNAIRE FOR COOPERATING TEACHERS
1967-68

Directions:

In order to be fair to the students, please answer the following questionnaire indicating whether you have been able to devote sufficient time that a fair evaluation of your student's ability is possible. For items not covered check last column (never).

The following list contains actions which were presented through the manuals and films. Please check appropriate box concerning the use and study of these actions.

Evaluation:

Replies were received from five teachers, codes 2, 8, 9, 12, and 17.

TOPICS AND SKILLS School Code 12	EVERY LESSON	REVIEW OFTEN	REVIEW FROM TIME TO TIME	SELDOM	NEVER
TUNING USING FINE TUNERS Rest position				X	
Regular position				X	
TUNING USING THE PEGS					
Rest position					X
Regular position					X
Open fifths					X
ESTABLISHING THE VIOLIN HOLD					
Case Walk			X		
Rest position		X			
Statue of Liberty Game		X			
Shuttle Game between 1st and 5th position		X			
Shuttle above fifth position					X
Left arm swing			X		
Left hand pizzicato drills		X			
Accompany melodies with left hand pizzicato				X	

TOPICS AND SKILLS	EVERY LESSON	REVIEW OFTEN	REVIEW FROM TIME TO TIME	SELDOM	NEVER
Tapping games for better position and vibrato			X		
Holding the violin without using the hands		X			
ESTABLISHING LEFT HAND AND FINGER PLACEMENT					
Octave Game First position		X			
Fifth position					X
Harmonics				X	
First finger played percussively					X
ESTABLISHING THE BOW HOLD					
Work with dowel stick or pencil when establishing bow hold				X	
Place and lift game				X	
High bow hold			X		
Shadow bowing				X	
Regular bow hold		X			
Rocking the bow		X			
Rolling the arm			X		
PLAYING AT THE MIDDLE OF THE BOW					
Short Strokes: At the Middle of the Bow		X			
At the frog			X		
At the tip			X		
Slurred strokes in string crossing			X		
Down bow strokes with rebound				X	
Up bow strokes with follow through				X	
Improve tone beginnings					X

TOPICS AND SKILLS	EVERY LESSON	REVIEW OFTEN	REVIEW FROM TIME TO TIME	SELDOM	NEVER
Arched releases					X
EXTENDING THE BOW STROKE					
Stance		X			
Weight transfer				X	
Full bow--singls strokes with return			X		
SPICCATO BOWING					
Silent bouncing with various rhythms					X
Bouncing on open strings					X
Fingered bouncing					X
RHYTHM ACTIVITIES					
Clapping to music			X		
Tapping to music					X
Stepping to music			X		
Left hand pizzicato		X			
Conducting				X	
Tapping on violin		X			
Right hand pizzicato				X	
Shadow bowing				X	
Regular bowing		X			
Tongue clicking					X
NOTE READING					
Rhythm Games		X			
Sight Reading Materials					X
Music reading and spelling of notes on tune sheets				X	
Use of viola clef for violin students					X

Number the tunes in the approximate order of their use. Place a zero beside those not used.

1 Hot Cross Buns
7 Jingle Bells
2 Mary Had a Little Lamb
5 Theme from 4th Symphony
8 Lightly Row
3 Old MacDonald
4 French Folk Song
18 Pop Goes the Weasel
10 London Bridge
9 Camptown Races
11 Skip to My Lou

12 Row, Row, Row Your Boat
6 Barcarolle
13 Jack and Jill
14 O Dear
15 On Top of Old Smoky
0 America
16 Daisy
17 Swanee River
0 America the Beautiful
0 Joy to the World

If you are using a method book, how far have you progressed? Name of method: Applebaum-Belwin String Builder, Book I, page 17.

Do your students sit, stand, or both? Stand

What would you consider the most significant part of the project?
I believe the development of action games, as explained in the manuals, films, and records, to be the most significant part of the project. The "games" offer a means of presentation which greatly aid the teacher in making the teaching of violin playing better and more enjoyable for both student and teacher.

Did some things go slower because of the project? If so, what.
Note reading was initially slower.

At the end of one year in what way, if any, are your students different from any other year?

1. Intonation is better.
2. Technic is more advanced.
3. Playing is somewhat more relaxed.
4. Bowing is generally better.
5. Rhythmic sense is developing more quickly.
6. Hand positions are as good or better with less work on the part of the teacher.

Each film and each "Action Study," as well as the musical materials produced, had at least one problem worthy of extensive research. After association with the Project for four years, one has the feeling that more techniques could have been objectively tested. However, many of the subordinate problems did receive attention, such as the relative worth of the Early Bow Hold. A simple questionnaire was used to gather data. Seven teachers replied with the following results:

University of Illinois String Research Project
Subject: High Bow Hold

1. Grade level of students involved:

   1st through 3rd -- 2
   4th -- 4
   5th -- 4
   6th -- 2

2. High bow hold was used:

   Yes -- 7
   No -- 0

3. High bow hold was achieved:

   Easier than normal hold -- 4
   About the same as normal hold -- 3
   With difficulty -- 0

4. Was dowel stick or pencil used in preparation of the bow hold:

   Yes -- 6
   No -- 1

5. How long was high grip used before transfer to conventional hold was made:

   2 weeks -- 1
   4 weeks -- 3
   2 months -- 0
   Other -- 3
   Comments:
   a) Usually 2-4 weeks; some used 2 months
   b) Varies with student
   c) 4-6 weeks depending on student

6. Was transfer accomplished easily:

   Yes -- 6
   No -- 1
   Comment: Some students persist in using the high bow hold despite attempts to encourage them to use normal hold.

7. Did the high bow hold prove to be an improvement in acquiring control and facility of the bow:

   Yes -- 6
   No -- 0
   Comment: Especially helpful for those with weak fourth fingers.

Out of State Centers

The evaluation of Project materials was even more extensive than has been suggested. Because teachers within the state are subject to a "halo effect" due to the impressive credentials of the Project Director, some evaluation was felt desirable from persons more removed. These locations were not Project centers in the full sense but were established to provide data on specific materials and objectives of the Project. A second reason was that cooperating teachers in the statewide project were invited to three workshops (described in Chapter Seven). During the workshops the teachers attended lectures by the Project Director and observed the results of his teaching. Both were unusual experiences, due to his phenomenal abilities in string pedagogy. There was some apprehension that teachers would leave the meetings and rely heavily on the information gained at the meetings, thus minimizing the use of the printed materials and films. However, it was recognized that films and printed information can never completely replace workshops. The workshop session was valuable, because many of the films were not completed on schedule.

One outside center was Dallas, Texas. A portion of this report has been abstracted as follows:

Report on the First Year Project Control Class, Dallas, Texas

Miss Ruth Lasley, highly accomplished and experienced string teacher in the Dallas schools, participated in the first teachers' workshop (July, 1967) and used Project ideas and materials in three of her classes throughout the year. The classes and their schedules were:

1. Beginner class: sixteen students from second through fifth grades, two thirty-minute periods weekly and one hour of orchestra.

2. Remedial class: five elementary students from the fourth and fifth grades, two thirty-minute periods per week and one hour of orchestra.

3. Remedial class: eight junior high students: remedial exercises and action games for five to ten minutes daily preceding orchestra rehearsal.

Miss Lasley's report of June 9, 1968 states that:

1. The fundamental ideas are applicable in any situation.

2. The students achieved gratifying results as to posture, hand position, freedom in body movement, and bow control. They also improved their vibrato.

3. All available films were shown. The "Remedial" film was shown twice to junior high school and elementary students.

4. The films made a decisive impression on the students with resulting improvement in performance, posture, and position.

5. One parent meeting was held in January with a good response. However, because of lack of sustained parent participation, the use of records and tunes in home practice was only partially successful, pending the age and understanding of the student and the parental supervision offered. Miss Lasley feels that parental supervision is necessary for the beginning student. Homework guides proved to be helpful if the parent had the time to become involved.

6. Repertoire included the Project tune record, "Easy Steps to the Orchestra," and other materials.

Miss Lasley made the following observations concerning the ideas and topics in specific manuals:

1. All of the actions in "Establishing the Violin Hold" were used in the beginning stages and continued throughout the year with excellent results. One had to mention only the game or exercises (the "Shuttle," "Case Walk," "Left Arm Swinging," "Tapping," "Statue of Liberty," "Securing the Violin," "Testing the Stability of the Violin") to obtain immediately better posture, left hand position, or more freedom in holding the instrument.

2. The motion studies in "Learning to Hold the Bow" were equally beneficial. The "Place and Lift" and "Rock the Bow" were particularly useful in establishing a natural bow hold and relaxed arm. However, I disagree with early use of the short, quick bow strokes. I prefer to let the child play at his own rate of speed, using the "Early Bow Hold" with the amount of bow he needs to produce a "humming" sound caused by a freely vibrating string. He needs to experiment to find the "node" or sounding point on the string where the bow will produce this resonant sound. He may then hear beats

and relate them to bow strokes. He is then ready to play short strokes, slurred strokes, bow releases, and the "Rebound" (a very fine exercise).

3. The actions in "Extending the Bow Stroke" were used to some extent and will be continued next year. "Fly Pizzicato" and bow strokes with arched return are excellent for free body movement and for understanding a freely vibrating string.

4. The actions in "Establishing Left Hand and Finger Placement" produce a beautifully balanced hand, and the use of the "Octave Game" is a great help in establishing good intonation.

5. Bouncing the bow as preparation for spiccato was introduced in the latter part of the year. We hope to use it more extensively next year. It has been an interesting and enlightening experience to have had some small contact with the research project. I hope that next year we can work on a more formal basis.

Reports on the effect of recordings in string instruction in tests conducted in Dallas, Terre Haute, Des Moines, Memphis, and Burbank, California centers are in Chapter Thirteen. These should be carefully read, as all data have been used in drawing the final evaluation conclusions.

First Wilmette Demonstration of the Chicago Area and Urbana-Champaign Project Classes, June 2, 1968

All of the materials and techniques are of little value unless they contribute to the type of violin player that the musical community desires. The objectives of the Project were not to make the student more curious about string music or merely to give him some experiences in music for which growth could be shown. Rather, they were concerned with achievement in string playing. An excellent evaluation procedure in such a situation was to identify competent string teachers and obtain their opinions as to how well Project students played the violin. These experts were free to use their own standards and were told only that the Project had emphasized freeing of muscular tension. Four evaluators were selected: Mr. Victor Aitay, Concertmaster of the Chicago Symphony; Margaret Farish, freelance string educator and author of String Music in Print; Dr. Marvin Rabin, Professor of Music Education at the University of Wisconsin and conductor of the Wisconsin Youth Orchestra; and Mr. Robert Shamo, noted public school orchestra director and string educator. Project classes were brought to a central location for this evaluation. The instructions to the evaluators follow.

Letter to the Evaluators, May 29,1968

Dear Evaluators:

This Sunday we are seeking information on specific objectives that the University of Illinois String Research Project has attempted to teach during the past year.

This is not a public performance comparable to the piano teacher's yearly recital which aims to demonstrate how well the students can perform and, of course, how well the teacher has taught them. We know that Professor Rolland is a superb teacher, and when his students perform well it means only one thing, that he is a good teacher. This has nothing to do with the research. The crucial question is whether the techniques of good teaching as Mr.Rolland uses them can be communicated to the majority of violin teachers through the media of films and accompanying manuals. We know that the teachers participating in the demonstration on Sunday are good teachers, and so it is extremely important that we make every effort to avoid to the extent possible the influences of the quality of teaching but rather concentrate on the content of the subject matter.

You will be expected to talk to the students and to the teachers in an effort to determine if they remember the teaching principles shown in the films well enough so that you can reasonably judge what effect thesefilms had in communicating ideas. The same procedure will be followed in the manuals. Then we would like to have you read the manuals and make some statements whether they clearly explain principles concerning playing the violin without excessive tension, or whether they are repetitious,whether they omit certain items or stress relatively unimportant ones, whether they are pedagogically sound, whether they are useful for beginning students or as a refinement for advanced players, and similar questionswhich might be helpful to us in revising the manuals.

On Sunday we are interested in how the students

hold the instrument,
hold the bow,
use the bow,
whether one can detect tension or stiffness in the neck, arms, legs, body; in short, look for any signs of unrelaxed position. We would expect that many relaxing motions might be overdone at this stage.

We are interested in the items you see that might cause problems in later instruction. Obviously we have taken time for the showing of films, for activities not directly connected with playing the violin (at least not in the student's eyes) and we expect them to be behind schedule in some respects, in note reading, for instance, but we hope that they are almost devoid of bad habits. However, if they look and play as you might expect any class of selected students who have studied somewhat less than a year taking two or three lessons a week, we wish to know this as well.

Please check with each teacher concerning the class schedule. Typically, the classes had two half-hour classes weekly with six additional meetings during the first six weeks.

I will have a checksheet prepared for each of you by Sunday so this evaluation can be honest and helpful to us. At this point in the project, we are perhaps more interested in negative comments than positive ones. The teachers and students will try very hard to please us; you need not feel committed to make a lot of platitudes in order not to discourage us or the students.

Sincerely yours,

Richard J.Colwell
Associate Research Director

NOTE TO PROJECT EVALUATORS

The objective of the University of Illinois string project is to develop and test materials, including student and teacher's books, recordings and films for the teaching of natural and tension-free violin playing movements applicable to students of any age, and supplementary to any standard method book of instruction.

The purpose of the research is to develop a course of study which will systematically present the requirements necessary to establish tension-free and natural playing movements, good tone production and a firm basic technique for the string student. This course of study is to include an accompanying handbook with musical examples, exercises and explanations usable as a companion to any method book and which can be effectively used regardless of the age of the student. (Let's assume the age to be the normal public school beginning age of 4th grade or 10 years old.) The course of study includes a series of recordings to serve as a guide for the home practicing of the student and a series of films used for the orientation of teachers and for demonstration to students.

Evaluation of such a program is complex and for this we have asked your assistance. The first problem is that good and experienced teachers are able to cover up any defects in the project materials. On the other hand, the best materials can be ineffective in the hands of inept teachers.

Our first and most important objective is to develop a course of study. This we have not done and need your assistance. We have a collection of materials and these need to be organized pedagogically in order to be effective.

We solicit your comments on:

a) a suitable format
b) the organization of these materials
c) the content of these materials
d) present omissions and vagaries

The content is not one of a method but rather the content essential and desirable for natural violin playing movements which are free of excessive tension. If we have materials that are not pertinent to this objective but rather resemble normal methods materials, please so comment.

We desire these comments on:

a) teacher manuals
b) student materials
c) recordings
d) films

The work of the first year should be considered completely experimental; we can revise or change anything that you might care to recommend.

The Wilmette evaluation was called to appraise the progress of the Urbana-Champaign and Chicago area first-year classes. Downstate classes were not included because of the distance, cost, and scheduling problems involved. However, the nine Chicago area classes gave a sufficiently large sample for evaluation.

The Urbana class, taught by the Project Director and his assistants, and the Champaign classes, taught by two experienced teachers conversant with the Project Director's idea and methods, were presented to demonstrate what could be accomplished when the principles and curriculum of the Project were closely observed. The Chicago area classes were taught by teachers who were familiar with Project principles only through the manuals, films, and the two-day workshops in May, 1967 and February, 1968.

The expectation was that Chicago classes would differ from the classes taught by the Project Director and his associates, since the manuals were yet unrefined, and the films, an important source of information, were not yet completed.

A purpose of the teaching was to expose the Project films and manuals to intensive use and to discover any shortcomings in them in order to make necessary revision. Shortcomings of the Chicago area classes were to be analyzed and probed for possible correlation with weaknesses in the manuals and films. Thus, the teaching was instigated to serve as a means for improving the materials of the Project.

In the above letter, the evaluators were asked to find answers to the crucial question " . . . whether the techniques of good teaching as Mr. Rolland uses them can be communicated to the majority of violin teachers through the media of films and handbooks which accompany these films."

The evaluators approached this question by searching for evidence that that use of Project materials had produced specific, consistent results, discernible in all or most of the classes observed. The following question served as a basis for discussion: Were there any playing movements or techniques characteristic of most of the students observed that the evaluators would not expect to find in any first-year class of similar age and background?

The evaluators agreed that, in general, the students from the Chicago area classes exhibited better than average positions of both hands, violin hold, and stance, and far greater freedom in bowing. The Urbana and Champaign classes were exceptional in these qualities, as well as in intonation and tone production.

Bow Hold

In general, the position of the bow hand was better than average in the classes, and, in some, it was excellent. Evaluators noted that the common fault of the high, arched right wrist appeared to have been eradicated. They approved the use of the Early Bow Hold in preparatory studies.

However, the studies designed to relax the bow hold do not necessarily result in the correct position. Some children went through the routine of rocking the bow with stiff fingers.

Bowing

The evaluators agreed that bow arms were well above average for beginning classes. The détaché stroke in the middle was executed correctly in all but a very few cases. With the exception of individuals in group 2, students appeared free of stiffness and able to keep the bow in continuous motion. Evaluators believed that the studies for "Rebound," release, and extending the bow stroke had produced the desired results.

Position of the Violin

The great majority of students had achieved an excellent violin hold and they were far above average in this respect. In general, those with small shoulder pads looked better than those without.

Left Hand Position

Students generally exhibited better than average left hand position, but results were not as consistent in this area. There was considerable difference among classes and among individuals within classes. When children were performing special Action Studies designed to establish correct left hand position (for example, the "Shuttle" and "Octave Game"), the results were excellent, but at other times not all students kept the left hand in the correct position--in other words, the games had been drilled, but their application wasn't always clear to the students.

(The hope that the extensive use of left hand pizzicato in the upper positions would result in good first position form did not materialize. These exercises greatly benefited good violin placement and particularly the strengthening of fingers, but they did not necessarily lead to good first position form. Therefore, during the second-year teaching, emphasis was placed on the correct positioning of the left hand through careful attention to the relationship of the base joint of the first finger to the violin neck and to the finger angle.)

The evaluators recommended that the manuals contain some solution to the problem of maintaining good left hand position during bowing exercises on the open strings, such as the practice of placing the left hand at approximately fourth position. This procedure was followed in school 9 and in the Urbana-Champaign classes with good results. This practice, although shown in the film and stated in the original version of the teachers manual "Learning to Hold the Bow," Action V, step one, was apparently overlooked by many of the teachers.

Stance

Generally, stance was considered good in the Chicago area classes and outstanding in the Urbana-Champaign classes. Most children appeared to be standing naturally, without excessive stiffness or constraint.

The evaluators did not think that several teachers used to good advantage the special exercises for shifting body weight. They observed that occasionally self-conscious, regimented movements resulted from the deliberate shift of weight from one foot to another throughout the performance of a study or tune, thus appearing contrived. However, one evaluator commented: "We can't expect them to play or look like little adults, and I, for one, think this is an unfair criticism."

Tone Production

The evaluators considered the tone quality of the Chicago area classes well above average and the Urbana-Champaign classes exceptionally good. Mr. Shamo observed that the tone of some classes was not focused. Dr. Rabin suggested that more body and vigor of tone might be encouraged by emphasis on martelé-staccato bowings and exercises in double stops. (The film "Martelé and Staccato" was unfortunately delayed, a factor which may have hindered the tone production.)

Mr. Shamo and Mrs. Farish agreed that a number of the students played with a weak tone but considered this to be a result of the individual teacher's approach rather than the use of Project materials. Mention was also made that attention to pressure and a bow placement close to the bridge might stiffen the right arm, hand, and fingers; thus, a weaker tone in the beginning stages might not be objectionable.

One evaluator noted that the manuals available during the first-year trial teaching omitted any discussion of the slant of the bow. The recommendation was that a position be taken on this question (tilting the bow at the frog versus playing with the bow hair flat on the string.) (The slant of the bow, originally explained only in the manual "Extending the Bow Stroke," was explained in the revisions of "Learning to Hold the Bow" and "Playing at the Middle with Short Strokes.")

Rhythm Games

The evaluators thought that the rhythmic actions with the violin were well done but those without the instrument were generally poorly performed.

The idea of rhythmic actions with a musical background is excellent but it seemed that teachers did not understand how to use the records effectively.

Frequently, the children did not respond rhythmically to the music. Some watched the teacher instead of listening to the recording. At times the action was not appropriate for the music selected. Dr. Rabin suggested that the use of contemporary music might produce a better student response. Mrs. Farish agreed, but Mr. Shamo preferred the use of music in traditional idioms because string instruments seem to be constructed for such intervals as octaves, thirds, etc. He did not approve of adding technical and aural difficulties at such an early stage.

Mr. Aitay and Dr. Rabin did not approve of chanting words for rhythmic symbols, such as "quarter, quarter, rest." (This practice was not proposed in or derived from project manuals but was used by at least one teacher.) Mrs. Farish agreed and said that these words were meaningless to children who have not become acquainted with rhythmic notation.

The use of rhythmic patterns in left hand action games (such as tapping) appeared most effective. Dr. Rabin said that rhythm games without the instrument have no place in string class. Others were undecided on this point.

Dr. Rabin commented upon the confusion caused by directions given by some of the teachers. The terms "high" and "low" were used both for movements of the left hand on the fingerboard (high and low positions) and across the strings (high and low strings). He suggested that these terms should refer to differences in pitch only. Dr. Rabin pointed out that this confusion does not exist in the manuals but in the vocabulary of individual teachers.

Intonation

There was little discussion on this point as this was not a main Project objective. However, the evaluators agreed that intonation was excellent in the Urbana-Champaign classes. Mr. Shamo considered the intonation poor in some of the Chicago area classes and pointed out that some instruments were not properly tuned. He observed that the guiding principles were so physical in nature that some of the students did not bother to listen well, nor did the teachers correct them. The fact that the Project focused on movement in violin playing did not imply that intonation and other aspects of good playing should be neglected.

Separate Report Submitted by Mrs. Margaret Farish

In my opinion, the Action Studies proved remarkably successful in establishing good position and physical freedom with the instrument. The failures were in application. The excellent bow hold or left hand position was not always maintained when attention was diverted away from the specific skill. Of course, this is characteristic of the beginner whose playing movements are not yet automatic. However, I believe it is also due to the fact that the teachers are trying a new approach based on materials which have been provided gradually during the course of the school year. Before starting the Project classes, the Chicago area teachers did not have an opportunity to examine all of the Action Studies, to consider them as a whole, and to plan procedures which would relate the various skills to one another and to other musical materials.

I doubt that the proper solution to this problem is the provision of detailed, sequential directions for teaching procedures. The majority of the teachers did follow the instructions in the manuals for teaching specific actions, and the evaluators agreed that most of these were well done. Criticized results stem from a lack of understanding or failure to recognize the implications of the teaching techniques. It is not enough to imitate Mr. Rolland's methods. Teachers should come to understand them. I cannot believe that it is possible, or necessary, to record every detail of his procedures. Films and handbooks explain his principles and illustrate his methods. Perhaps it should be emphasized that all of the Action Studies have many possible applications, beyond those given as examples.

One reason that Mr. Rolland's teaching techniques cannot be completely reproduced in a permanent form is that he continues to expand them. His goals may remain constant, but his methods are not static. This is precisely what I want other teachers to understand. They should not only use Mr. Rolland's specific techniques; they should also try to attain some measure to his inventiveness. To do this, they must comprehend the underlying principles of violin playing which produced the Action Studies.

Perhaps more introductory material would help. The manuals might be grouped according to a series of levels with a general explanatory manual provided for each level. Explanatory manuals could summarize the techniques being developed by the separate actions, discuss their correlation and suggest methods of application. (During 1969-70, two introductory films and manuals, "Principles of Movement in String Playing," and "Young Violinists in Action," were produced. The introductions in all of the original manuals were revised and/or expanded, and numerous revisions were made in the early films.)

I look upon a research project as an attempt to extend and disseminate knowledge. A successful body of work offers the profession insights which can be used by many persons in many ways. Teachers must have musical materials, but I do not think that the Project should attempt to provide all the tunes and repertory required. Musical studies and compositions should illustrate the kind of materials needed and the way in which Action Studies may be applied in the teaching repertory. I would like to see all of the actions placed in a musical context, as in the Fletcher pieces which exploit the octave or shifting with harmonics. Other pieces could be based on rhythms played or tapped in the shuttle game; successive down-bows could be employed as an integral part of a composition, etc.

The one manual that I would thoroughly revise is "Rhythm Training." I do not believe that the rhythmic actions without the instrument are being taught effectively. Teachers do not appear to see a musical purpose in this activity. I asked three of the cooperating teachers what they consider to be the goal or value of the rhythm games they demonstrated. All seemed surprised at the question and none was able to frame a convincing answer. One of the teachers did say that she thought the games relieved psychological tension. Personally, I wish every child could have training in eurhythmics. I am convinced that this is the most natural approach to the study of music, but I doubt that many string teachers are equipped to offer this training.

I think the rhythmic actions would be more effective if they were directly related to the development of specific musical skills. Actually, much of the manual is concerned with the teaching of notation. I believe that the children observed could be much farther along in the study of rhythmic notation if this part of the manual had been applied imaginatively. Apparently, these teachers did not know how to use the reading games, or they did not want to use them. I recommend a consideration of more effective methods for establishing the concept of the pulse and developing the ability of students to recognize and act upon it. I also suggest that the reading section be laid out in such a way that polyrhythms could be easily played and understood.

Evaluation Tools, 1968-69

One of the evaluative techniques already mentioned was the taking of still photographs on a regular schedule. Admittedly this has disadvantages, but when properly interpreted can provide valuable research data on positions. Nearly 200 photos were taken in January and February of the second year. Each photograph was evaluated on a five point scale, (five being the highest possible rating) by at least two and usually three string experts. Mean scores for each school and each of four positions were computed and are shown in Table 9. No effort was made to compare schools except when it was learned how different the schools were in terms of material used and then it became necessary to evaluate in terms of each teacher's objectives instead of recommended Project objectives. As indicated earlier, with respect to the films, it was not possible through evaluation to determine which school spent the most time on Project materials.

TABLE 9

TABULATION OF PHOTOGRAPHS
January-February, 1969

	VIOLIN				CELLO & BASS		
	Bow Hold	Left Hand	Vln.-Vla. Hold	Stance	Bow Hold	Left Hand	Hold of Cello-Bass
School 14	5	4.7	4.3	-			
School 8	4.6	4	5	-			
School 9	4.5	4.6	5	-			
School 17	4.6	4.3	4.4	4.1	5	4.9	4.8
School 20	4	5	3	-			
School 4	4	3.5	4.5	-			
School 19	4.4	3.4	4.3	-			
School 1	3	4	3.8	-			
School 16	4.4	3.7	-	-	3.9	4.7	4.1
School 2	4.2	3.2	4	-			
School 11	4.7	4.2	4.4	-			
School 18	5	3.4	3.9	3.8			
School 10	4.4	3.6	4.6	4.3			
School 6	4.4	3.7	4	3.5			
School 13	3.3	1.5	4.2	-			
School 15	3.6	3.8	3.6	-	4	4	4.3

Various evaluation procedures can be found throughout this Report. A second conference with consultants was held with Margaret Farish, Marjorie Keller, Robert Klotman, Marvin Rabin, and Howard M. Van Sickle in attendance. This served the function of providing expert opinion on Project materials developed during the first two years and gave the Project staff an opportunity to make changes for the final year. The conferences with teachers were another source of data from a different perspective. These meetings are reported in Chapter Seven.

During the first year, video tapes were made of local classes. These were shown to the Project advisory staff, to its consultants, and to others for evaluation. In each case specific questions were asked and free response was encouraged. Some of these video tapes were so successful that they were used during workshops.

During the second year a sophisticated video tape evaluation was undertaken to answer the demands of those who desired a comparison with a control group. The Project staff realized that there were many old and more recent string instruction methods on the market. However, the Project's main objectives were not incompatible with any of these; its primary objective was to present materials and exercises that would be helpful in reducing tension in the young player. Supplementary materials developed in the Project were due to the Project Director and his belief that certain materials were complementary to Project objectives. The research consultant to the Project continued to recommend that, in his opinion, only a thorough evaluation of the Project classes was necessary to determine the success of Project objectives.

The following program was developed for video evaluation. The initial letter to Project centers was as follows:

January 24, 1969

Dear Project Teachers:

A new phase of the Project evaluation will begin in two weeks. The Project has finally received its video tape machine which will be of great help to our evaluation process. This machine will give a chance to your pupils to "be on TV."

It should be clearly understood that the taping sessions are not for the evaluation of your teaching but to see if the Action Studies are making a difference in the students' playing as compared to children who are not taking part in the Project. The evaluation committee, including myself, will not know where the children come from; only Karrell Johnson, Project assistant in charge of the taping sessions, will know "who is who" on the tapes.

Your only responsibility in this work is to help to prepare the student for the very simple tunes selected for the first- and second-year students. These tunes are enclosed. Please pass them out and explain their purpose. On the day of taping a few students will be asked to play this tune along with a few Action Studies that, according to your reports, have been covered in the class.

The exact day of the taping session will be arranged by phone. Please help Karrell have a successful video taping session.

With best wishes,

Paul Rolland

The Project assistant reported the following procedures:

Project classes were selected at random with the only consideration being day and time the class meet. The Champaign-Urbana classes were not included because of their frequent contact with the Project Director.

Don Miller, in cooperation with the Illinois Office of Education, compiled a list of the most outstanding classes in the state which had not had previous experience with Project materials. The control groups were selected from this list on the bases of teacher cooperation and class schedules.

Approximately two weeks prior to video taping, simple tunes were sent to both Project and control classes. These melodies had no connection with Project material. The melodies involved certain aspects of bowing and tone production which might show any advantage one might or might not have gained by studying the Project Action Studies. All Action Studies were covered equally in the taping. The control classes were given approximately five minutes of instruction on an Action Study before video taping. Project classes were not given prior notice of the Action Studies to be taped. The students were just asked to perform Action Studies which they had been studying. They had no instructions or rehearsal immediately before video taping. The teacher took no part in the tape preparation except to teach the melodies in advance. The teachers were permitted to conduct their classes during the video taping or allowed to observe the taping session.

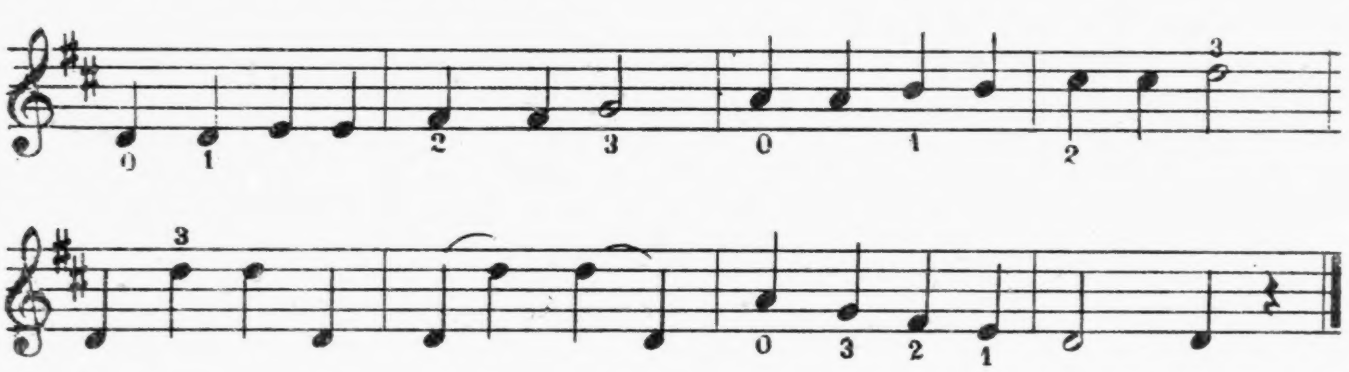
The same two Project assistants taped all of the classes. The machines were in place when the classes arrived; brief instruction was given. After taping each class, the assistants photographed a card stating a code number. On the back of each card needed information was given. The cards were not seen by Project personnel, other than the assistants who did the video taping, until after the evaluation.

Placement on the tape was random: situations 1-3 were control, 4-6 Project, 7-8 control, 9-12 Project, 13 control, 14 Project, 15 control, 16-21 Project, 22 control, and 23 Project for a total of eight control and 15 Project centers. The music used was the following:

FIRST YEAR EVALUATION TUNE

MM ♩ = 72 with broad strokes
MM ♩ = 104 with short strokes

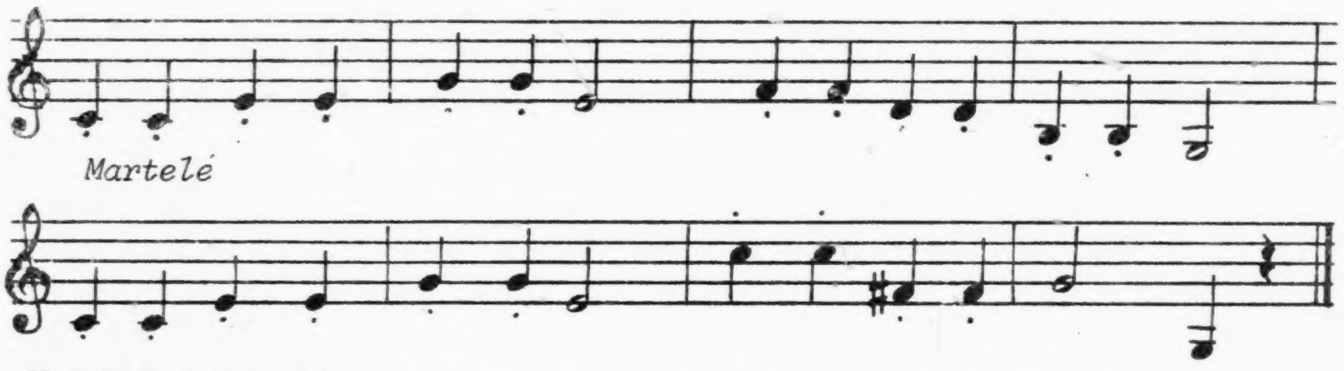
Violin, Viola, Cello have same parts



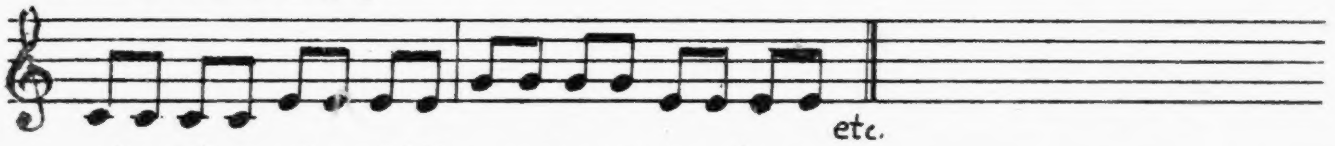
SECOND YEAR EVALUATION TUNE

MM ♩ = 80 (approximately)

Violin, Viola, Cello have same parts



VARIATIONS



Détaché at the middle; spiccato at the frog

Because the entire staff now could recognize some Project students, the decision was made to employ outside evaluators for this aspect of the total evaluation process. Since the primary emphasis was freedom from excessive tension, it was believed that any expert string educator should be a valid judge of the success of Project materials. The concern was not that the pedagogy was good for this grade level. (Incidentally, Project principles are not limited to grade level and can be used at any age.) The concern was only whether there was a discernible difference between Project and control classes.

Three string experts were selected from a list compiled from various sources. The Research Director, without consulting the Project Director, selected three: Joshua Missal, Professor of Music and violist in the String Quartet, Wichita State University; Kent Perry, an expert on the Suzuki system and Professor of Violin, Southern Illinois University at Edwardsville; and Priscilla Smith, Director of Orchestra, Indianapolis Public Schools. All three were brought to the campus for an all-day viewing session. Each Action Study was evaluated on a five point scale; the ratings of the judges and averages are shown in Table 10.

Averages of first-year classes were: control--2.44; Project--2.91. There was no significant difference between second-year control and Project students (control--2.78; Project--2.82). It should be stated that these figures do not represent the local classes under influence of the Project Director, which would have significantly raised the Project score averages. However, the evaluators comments are more helpful than the numerical ratings in ascertaining real feelings. These comments are presented as Form 4 in Appendix C.

TABLE 10

VIDEO TAPE EVALUATION
Control Classes

C = Control
a = First year classes
b = Second year classes

This table shows scores of the three judges and the average for each Action Study. A five point scale was used (high = 5).

		Shuttle	Fly Pizzicato	Place & Lift	Tapping	Shadow Bowing	Rock & Roll	Octave Game	Left Hand	Tune	Class Average
First Year Av.: 2.44	C-1a	1,3,2 2.0	3,1,2 2.0	1.1,2 1.3						3,3,3 3.0	2.07
	C-2a	1,1,2 1.3	1,2,1 1.3			3,5,4 4.0				3,2,2 2.3	2.22
	C-3a			2,1,1 1.3					2,3,2 2.3	1,1,1 1.0	1.53
	C-4a							2,2,1 1.6	5,4,5 4.8	3,2,2 2.3	2.83
	C-5a				3,3,3 3.0	3,3,4 3.3	2,3,2 2.3			4,2,3 3.0	2.90
	C-6a						3,3,3 3.0		3,4,2 3.0	2,3,2 2.3	2.76
	C-7a			2,1,1 1.3			3,4,1 2.6			5,5,4 4.6	2.83
Second Year Av.: 2.78	C-8b				3,4,3 3.3		2,1,1 1.3			5,5,4 4.6	3.06
	C-3b		2,2,2 2.0				2,2,1 1.6		2,3,2 2.3		1.96
	C-4b				3,5,2 3.3					4,4,4 4.0	3.65
	C-7b	3,4,3 3.3		3,4,2 3.0					3,3,2 2.6	1,1,1 1.0	2.47

TABLE 10
Continued

PROJECT CLASSES - First Year

Av.: 2.91

P = Project Numbers = School Codes

	Shuttle	Fly Pizzicato	Place & Lift	Tapping	Shadow Bowing	Rock & Roll	Octave Game	Left Hand	Tune	Class Average
P-10a				2,4,1 2.3		4,3,4 3.6			3,1,2 2.0	2.63
P-1a					4,5,5 4.6			4,5,5 4.6	4,4,4 4.0	4.40
P-14a						4,4,4 4.0	4,4,3 3.6	3,4,2 3.0	4,5,4 4.3	3.72
P-20a		4,1,2 2.3	3,2,3 2.6					4,5,4 4.3	2,2,2 2.0	2.80
P-15a	2,4,4 3.3	3,4,1 2.6								2.95
P-9a			2,3,3 2.6	3,4,2 3.0	5,5,5 5.0				3,4,2 3.0	3.40
P-6a	4,3,3 3.3	5,5,4 4.6		3,2,2 2.3	4,5,4 4.3		3,3,3 3.0		3,3,5 3.6	3.51
P-19a			1,1,2 1.3			1,1,1 1.0	1,1,1 1.0		1,3,1 1.6	1.22
P-2a		1,1,1 1.0			1,1,2 1.3	4,4,2 3.3	3,1,1 1.6		2,2,2 2.0	1.84
P-16a		4,2,2 2.6		4,4,2 3.3				3,2,2 2.3	3,4,4 3.6 Av.: 3.3	2.95 Av.: 2.63
P-16a	4,2,4 3.3					2,1,2 1.6			2,4,3 3.0	2.79

Table 10
Continued

PROJECT CLASSES
Second Year
Av.: 2.82

	Shuttle	Fly Pizzicato	Place & Lift	Tapping	Shadow Bowing	Rock & Roll	Octave Game	Left Hand	Tune	Class Average
P-6b		3,5,3 3.6	3,5,4 4.0			3,4,2 3.0	3,2,2 2.3		3,2,3 2.6	3.10
P-14b	5,5,5 5.0			5,5,5 5.0				3,4,3 3.3	5,5,5 5.0	4.57
P-9b	2,4,2 2.6		4,4,4 4.0		4,4,2 3.3				2,2,3 2.3	3.05
P-17b	4,4,3 3.6	2,4,1 2.3		1,5,1 2.3				4,4,3 3.6	4,4,3 3.6	3.08
P-19b		1,4,2 2.3	3,4,4 3.6		4,3,3 3.3		2,1,1 1.3	2,5,3 3.3	2,3,1 2.0	2.63
P-13b			4,4,4 4.0	2,3,1 2.0		3,3,2 2.6		1,1,1 1.0	1,1,1 1.0	2.12
P-13b	2,1,2 1.6	2,1,4 2.3		Av.: 1.65 1,2,1 1.3	2,3,2 2.3	2,2,3 2.3	2,2,1 1.6		Av.: 2.3 4,4,3 3.6	2.17
P-13b					Av.: 2.45 3,2,3 2.6	Av.: 2,3 2,3,1 2.0	Av.: 1.95 3,2,2 2.3	Av.: 1.15 1,1,2 1.3		Av.: 2.11 2.05
P-16b								2,3,4 3.0	1,2,2 1.6	2.30
P-2b	3,1,1 1.6		3,3,4 3.3	2,2,1 1.6				2,1,1 1.3	1,1,1 1.0	1.76

Averages

Control	2.20	1.76	1.72	3.20	3.65	2.16	1.66	3.00	2.81	2.46
Project	3.03	2.62	3.17	2.68	3.46	2.68	2.10	2.98	2.70	2.82

In the opinion of the staff members assigned to evaluation, the Action Studies, whether shown by the film, by manual, or by demonstration, were the heart of the Project. It was the use of the Action Studies that was supposed to bring about reduction of and/or freedom from tension. Consequently, much effort was expended on developing a plan for the evaluation of the Action Studies.

Each Action Study was identified by title and then described in behavioral terms. Project assistants were instructed to practice using this form before administering it. Staff meetings were held to define standards. These standards no doubt varied, but the use of mean scores is probably meaningful.

During visits each Project assistant randomly selected students and rated them on skills known to have been recently taught. The ratings reflect not only the accomplishments of the students but also the difficulty of the Action Study. Surprising as it may seem, teachers seemingly did not perceptively distinguish difficulty among skills and treated them all alike, rather than identifying those that required more explanation and more drill.

An equally important consideration is the wide spread not only among schools, but also among students. One might expect that one of the objectives of instruction in skill development is to reduce individual differences. This did not happen. Drill in the form of practice seemingly was not common with the Action Studies. If the student understood the action in the class presentation, fine; if he didn't, no concern was exhibited, as is customary with the more conventional skills of music performance. The range of scores on a nine point scale was from 8.13 on the "Case Walk," perhaps the first skill introduced and one of the easiest, to 1.5 on sautillé bowing. The more advanced Action Studies were not necessarily more difficult but were developed to help techniques needed later in the instruction. For example, whole step patterns in unit 21 received a rating of 8.50.

The evaluation form proved to be a reliable and valid instrument. Most Action Studies have mean ratings between five and six with the dispersion indicated above. The accomplishment of skills appears to be normally distributed.

The instructions to the assistants, the evaluation form, and the mean scores follow:

UNIVERSITY OF ILLINOIS STRING RESEARCH PROJECT EVALUATION PROCEDURE

Rank each student or the class on the basis of criteria listed on the evaluation sheets.

For ranking use a scale from 1 to 9.

Five is average and should represent about 20% of the students.

One is the lowest with 4%. Two is the next with 7%; three is next with 12%, and so on.

1	2	3	4	5	6	7	8	9
4%	7%	12%	17%	20%	17%	12%	7%	4%

Please justify your rating with written comments. Any time you observe an action comparable to actions presented in the films, the rating should be filled out.

UNIT ONE - EVALUATION
CRITERIA & FORM

Date________Visit________Teacher__________Student Name__________Year__________

L-1 1. Hold the violin in rest position. 1 2 3 4 5 6 7 8 9
MEAN SCORE: 8.07 (1 is low; 9 is high)

The scroll is near the face; the left hand embraces the neck around the 4th position. The 1st finger base is next to the neck and will touch it at the left end of the 1st crease. The fingers are over the string.

Comments:

2. Transfer into playing position. 1 2 3 4 5 6 7 8 9
MEAN SCORE: 7.55

Transfer the violin into playing position without spoiling this alignment of the left hand and arm; have the student pluck during the transfer.

Comments:

3. Establish good stance. 1 2 3 4 5 6 7 8 9
MEAN SCORE: 6.81

Stance. The feet are slightly straddled and the knees are not stiff. Have a teacher or evaluator pull and push the student by the scroll. The student should lightly sway accordingly.

Comments:

4. L. H. pizzicato on open string. 1 2 3 4 5 6 7 8 9
MEAN SCORE: 7.44

The student plucks the open string with the 3rd or 4th finger and can do this at least in the low and middle position and before long in the high position as well.

Comments:

R-1 1. Prepare the bow hold - use dowel stick or pencil.
1 2 3 4 5 6 7 8 9
MEAN SCORE: 6.30

The student forms the circle and places all fingers correctly. All of the fingers are slightly curved.

Comments:

R-T 1. Listen to the music and act on the pulse.
1 2 3 4 5 6 7 8 9
MEAN SCORE: 7.20

The student can reproduce a simple rhythm by clapping or tapping with a stick.

Comments:

2a. The student claps, taps or steps on the pulse.
1 2 3 4 5 6 7 8 9
MEAN SCORE: 8.03

The action should continue during rests.

Comments:

UNIT TWO - EVALUATION CRITERIA & FORM

Date______ Visit______ Teacher________ Student Name________ Year______

L-1 5. Case walk 1 2 3 4 5 6 7 8 9
MEAN SCORE: 8.83

Walk with the violin alternately held as a tray and overhead. Do not rest violin on head. Pull in tummy. Step with the pulse of the music.

Comments:

R-1 2. Early bow hold with help of left hand. 1 2 3 4 5 6 7 8 9
MEAN SCORE: 6.38

Hold the bow above the frog but not above the balance point. The thumb and little finger must be curved, the hair close to the thumb. At first, the left hand helps to steady the bow at tip.

Comments:

3. Shadow bowing. 1 2 3 4 5 6 7 8 9
MEAN SCORE: 6.58

Draw the bow over the shoulder while maintaining a good bow grip. The arm and bow should be in one plane. Also move bow through a short tube. Hold the tube where normally the bridge would be located. In moving the bow do not saw from the shoulders, use forearm action. Do two types of games: a) to the rhythm of melodies b) to the pulse of melodies.

Comments:

L-2 1/a Correct Finger placement (1st,2nd,3rd) 1 2 3 4 5 6 7 8 9
MEAN SCORE: 5.68

The first finger level and angle are correct (first crease at the level with edge of the fingerboard when on the middle strings). The 2nd phalanx of the 1st finger is approximately parallel to the string when playing E - B on the middle strings. The 1st finger's nail is turned toward the player's face; the finger leans in the direction of the lower strings. Do not deny the sideways support of the first finger, but this must not be on the palmar base of the 1st finger. Do not place the 2nd finger completely steep on F sharp, C sharp; it should incline slightly toward the scroll. The 3rd finger is close to the 2nd and is matched to the octave. The left hand is on the right side of the neck - not under. The finger joints must not collapse; the string must be held with the tips of the fingers (no joint cave-in.)

Comments:

1b. Rest and playing position. 1 2 3 4 5 6 7 8 9
MEAN SCORE: 5.83

Establish the placement of the 1st three fingers in rest position and in playing position. Observe the preceding principles, and the three point contact of thumb, finger tip, and root of the 1st finger.

Comments:

P-T 2b Act on the rhythm of melodies. 1 2 3 4 5 6 7 8 9
MEAN SCORE: 7.53

Clap, tap, wave, shadow bow, and step on the rhythm of melodies.

Comments:

UNIT THREE - EVALUATION CRITERIA & FORM

Date________Visit________Teacher__________Student Name__________Year________

L-1 6. Shuttle (low-middle positions) 1 2 3 4 5 6 7 8 9

MEAN SCORE: 4.23

The shifting movement should be smooth; avoid jerking. The crease at the root of the finger is kept in an approximate line with the edge of the fingerboard. The hand should "flow". Study first with right hand help, then without. In the latter case the instrument should be held firmly. Combine the shuttle with left hand pizzicato.

Comments:

R-1 4,5,6. Hold violin and bow together--middle register.

1 2 3 4 5 6 7 8 9

MEAN SCORE: 5.54

The violin hold is well established. The left hand is around the 4th position and the bow is hanging on the little finger. The student is able to shape up the correct bow hold. There is a circle between the thumb and middle finger and the other fingers are slightly curved. There is no stiffness in the finger joints. Hook bow tip over the left 4th finger. The student can tap any finger, shake the hand, roll the arm with the bow in hand without a collapse of the bow grip.

Comments:

7. Place bow on string at balance point. 1 2 3 4 5 6 7 8 9

MEAN SCORE: 5.88

The student can transfer the bow from the little finger to the string and maintain a good bow hold, or correct it if it goes wrong.

Comments:

8. Rock and Roll. 1 2 3 4 5 6 7 8 9

MEAN SCORE: 6.24

In Rocking, the weight of the bow rests on the string. In Rolling, the arm and bow are moved freely and in one plane.

Comments:

9. Place and lift the bow. 1 2 3 4 5 6 7 8 9

MEAN SCORE: 6.21

Place and lift the bow and arm as one unit. Place the bow on the string at various parts of the bow. The student notices and feels when the bow hold collapses and is able to correct it.

Comments:

R-2 1. Play free rhythms on single string.
2. Play word and name rhythms. 1 2 3 4 5 6 7 8 9

MEAN SCORES: (1) 5.84 (2) 6.33

The student can play short strokes at the middle with improvised rhythms. The bow is kept about halfway between bridge and fingerboard, and the bow hold remains correct. The student knows the meaning of down- and up-bow. The hair remains at a right angle to the string, and the tone is clear. The student can also play definite rhythms.

Comments:

UNIT FOUR - EVALUATION CRITERIA & FORM

Date_______Visit_______Teacher_________Student Name_________Year_______

L-1 6b. Shuttle (middle-high) 1 2 3 4 5 6 7 8 9
MEAN SCORE: 5.79

The violin is well placed, high enough on the shoulder so that the student can slide up to the top position. The tip of the thumb balances the instrument at the throat of the neck. When in the high position the fingers are extended and almost straight in the highest position. The student can shift back and forth without shaking the violin or relocating it on the shoulder. Do this first with right hand help, then without. Pluck and strum in the middle and high positions.

Comments:

6c. Shuttle (low-middle-high positions) 1 2 3 4 5 6 7 8 9
MEAN SCORE: 5.86

Same criteria as in the preceding. Don't wrap the thumb around the throat of the neck.

Comments:

L-2 2a. Play octave - 0 and 3 fingering 1 2 3 4 5 6 7 8 9
MEAN SCORE: 6.30

The student finds the octave and compares it to the open string on the left. The 1st and 2nd fingers are kept on the string and the angle of the fingers is correct; 1st finger is on its tip and leans toward the lower string and the scroll (not to the right and forward). The octave can be played pizzicato or with the bow.

Comments:

R-2 3. Bowings in open string cycles 1 2 3 4 5 6 7 8 9
MEAN SCORE: 5.86

The student plays a rhythm beginning on the E string at the middle of the bow, then repeats it on each of the lower strings. In crossing strings the elbow rises with every string crossing. The bow grip remains correct and the hair crosses at the strings at the right angle.

Comments:

R-T 4. Reading of rhythms - pulse and rests 1 2 3 4 5 6 7 8 9
MEAN SCORE: 6.48

The student plays a suitable open string to a melody played by the teacher or record player. Do this by ear and with the rote teaching aid to find the proper open strings.

Comments:

4a. Open string harmonies to melodies 1 2 3 4 5 6 7 8 9
MEAN SCORE: 7.47

The student reads rhythms consisting of quarter notes and quarter rests by clapping, tapping, pizzicato, or with the bow. See rhythm games, pages 2 and 3.

Comments:

UNIT FIVE - EVALUATION CRITERIA & FORM

Date______ Visit______ Teacher________ Student Name________ Year______

L-1 7. Place violin with the left hand along ("Statue of Liberty")
1 2 3 4 5 6 7 8 9

MEAN SCORE: 6.44

Embrace the violin in rest position. The left hand must be in the 4th or 5th position - not lower. When raising the instrument high, step to the left and shift weight on to the left foot. Test this weight transfer by asking the student to tap the right toe. Place violin correctly on the shoulder, not in front of the throat. When the left hand is moved to the right shoulder, the violin does not sag. Check that the chin rest-pad combination is comfortable.

Comments:

L-5 1. Tap rhythms and groups of notes 1 2 3 4 5 6 7 8 9

MEAN SCORE: 6.05

Tap the rhythms with quick whip-like motions of the hand. Tap against top plate, on the G string in the high, middle, and low positions. After tapping, fingers bounce up as a rubber ball upon striking the floor.

Comments:

R-2 5. Slurred string crossings (open strings)
1 2 3 4 5 6 7 8 9

MEAN SCORE: 5.63

The arm and bow move in the same plane during string crossing movements. The crossings are rounded, smooth, and well-timed. The elbow rises for the lower strings and drops for the lower strings. Feel the student's elbow for signs of tension and resistance. It should "float."

Comments:

R-1 10. Place and lift bow, hold bow in regular position.
1 2 3 4 5 6 7 8 9

MEAN SCORE: 6.48

The student recognizes if the bow hold deteriorates during the "Place and Lift Game" and knows how to correct it.

Comments:

UNIT SIX - EVALUATION CRITERIA & FORM

Date______Visit______Teacher________Student Name_________Year_______

L-1 8. Secure and stabilize violin. 1 2 3 4 5 6 7 8 9
MEAN SCORE: 5.18

Teacher tunes while student plays L. H. pizzicato. The student is able to place the violin correctly and hold it while dropping the left hand. He can swing his arms as in walking. The chin pressure is directed toward the neck--not forward. The shoulder must not be raised substantially. Good chin rest and pad combination permits reasonable comfort of the violin hold.

Comments:

R-4 1. Fly pizzicato 1 2 3 4 5 6 7 8 9
MEAN SCORE: 5.88

The student's stance is poised. The long pizzicato movements are directed forward. The elbow is extended in tip position; the down-bow and its return are done with a continuous motion. There is a transfer of weight toward the left foot in approaching the tip, and toward the right foot when returning to the strings.

Comments:

R-T 4b. Combine the pulse with subdivisions. 1 2 3 4 5 6 7 8 9
MEAN SCORE: 6.55

The student is able to clap the 8th notes from "Hot Cross Buns" while stepping out the beat. He can do similar subdivisions combining triplets and sixteenths with the beat.

Comments:

UNIT SEVEN

R-4 2. Use various parts of the bow in free rhythm *("Wandering").*
1 2 3 4 5 6 7 8 9
MEAN SCORE: 6.33

A sample bowing pattern is played with short stroked, repeated without interruption while the student "wanders" with the bow from the middle toward the tip and back toward the frog.

Comments:

L-4 1. Play long silent shifts 1 2 3 4 5 6 7 8 9
MEAN SCORE: 6.09

Shift back and forth between the low and high positions with smooth unhurried motions. Do not drape the thumb around the throat of the neck but balance the neck near the tip of the thumb. Do the same, playing harmonics with the 3rd finger and using the bow. Hold the instrument firmly enough. Extend the finger tips when reaching into the high positions.

Comments:

UNIT EIGHT - EVALUATION CRITERIA & FORM

Date________Visit________Teacher_________Student Name_________Year________

L-1 10. Swing the arm for flexibility 1 2 3 4 5 6 7 8 9
MEAN SCORE: 5.60

Swing the arm in and out while playing left hand pizzicato on the low and high strings. Combine also with the shuttle. Strum the low string in the high position and the high string in the low positions for maximum elbow movement.

Comments:

L-3 1a. Use of 4th finger in low placement 1 2 3 4 5 6 7 8 9
MEAN SCORE: 6.50

The student can play the Blue Lullaby or a tune or exercise with 1234 pattern.

Comments:

R-5 1. Preparation: place bow and add pressure
1 2 3 4 5 6 7 8 9
MEAN SCORE: 5.69

Place and lift the bow; after placing the bow on the string, press the stick into the hair. Keep the fingers curved.

Comments:

2. Produce a biting sound (colle-pique) 1 2 3 4 5 6 7 8 9
MEAN SCORE: 6.03

Play collé - piqué strokes with biting sounds. The bow must not slip nor should the sound be scratchy. Keep fingers curved. The strokes may be all down-strokes, all up-strokes, or may alternate down-up.

Comments:

UNIT NINE - EVALUATION CRITERIA & FORM

R-3 1. Bounce the bow silently 1 2 3 4 5 6 7 8 9
MEAN SCORE: 5.55

Bounce the bow silently between frog and balance point. The bow grip remains relaxed, fingers curved "as if held by 2 hands" - refer to the sensation of holding the bow while the tip is hooked on the little finger of the left hand.

Comments:

R-4 3. Silent lifted bow transfer 1 2 3 4 5 6 7 8 9
MEAN SCORE: 5.96

Lift and place the bow near the frog, near the tip. Move it back and forth. The student recognizes when his bow grip gets stiff and can correct it.

Comments:

UNIT NINE CONTINUED

Date______Visit______Teacher________Student Name________Year_______

L-3 1b. Use of 4th finger-normal placement 1 2 3 4 5 6 7 8 9

MEAN SCORE: 5.91

Use the 4th finger in its regular placement; match to the open string on the right. The wrist should not bulge when doing this. When the little finger is short move the wrist rather forward.

Comments:

UNIT TEN - EVALUATION CRITERIA & FORM

R-3 2. Bounce the bow with sound. 1 2 3 4 5 6 7 8 9

MEAN SCORE: 5.67

Play slow spiccato between frog and balance point and produce acceptable sounds. Vary the height of the bounce, and adjust the length of the bow stroke accordingly.

Comments:

R-2 6. Tone beginnings and releases (rebound and follow-through) 1 2 3 4 5 6 7 8 9

MEAN SCORE: 4.28

Play single strokes. Place bow on the string and play loud and soft tones with an acceptable sound. Begin the tones without scratching. Release either by lifting the bow or by leaving the hair on the string without choking the sound.

Comments:

UNIT ELEVEN

R-3 3. String crossing with bouncing bows 1 2 3 4 5 6 7 8 9

MEAN SCORE: 5.24

Play bouncing bows between the frog and balance point involving string crossing patterns. The elbow must rise or fall in string crossings. The bow hold should remain flexible--fingers curved.

Comments:

R-4 4. Short strokes--lifted transfers 1 2 3 4 5 6 7 8 9

MEAN SCORE: 5.66

Play a short rhythm pattern in the middle of the bow. Stop, then lift and place the bow in another spot. During the transfer, maintain a good bow hold.

UNIT TWELVE - EVALUATION CRITERIA & FORM

Date______Visit___ ___Teacher________Student Name________Year_______

2. Vertical finger movement. 1 2 3 4 5 6 7 8 9

MEAN SCORE: 5.81

Play slurred patterns with repetitious finger movement. The fingers rise and fall with a springy action to produce a clear ringing sound. Do this with adjacent fingers, or skip a finger.

Comments:

5. Long single strokes followed by a release

1 2 3 4 5 6 7 8 9

MEAN SCORE: 6.16

Play long single strokes releasing with a slight upward motion at the end of the strokes. The stroke and release should be done with the same momentum. Do this two ways: lift the bow off the string; leave the bow on the string and release the tone without choking the sound.

Comments:

1a. Sequential actions and follow-through (note-note-rest)

1 2 3 4 5 6 7 8 9

MEAN SCORE: 5.21

Play down-up strokes followed by a rest. During the rest, the motion is continued in the air as the hand and fingers move up. The follow-through of the up-stroke continues the momentum. There is a slight transfer of weight during the strokes.

Comments:

R-5 3. Martelé stroke 1 2 3 4 5 6 7 8 9

MEAN SCORE: 5.11

Play biting attacks with very short strokes, gradually increasing the length of the stroke. Do this on open strings or in pieces.

Comments:

UNIT THIRTEEN

L-5 2. Vibrato--teacher vibrates student's fingers.

1 2 3 4 5 6 7 8 9

MEAN SCORE: 6.16

Pupil holds the string with the 2nd or 3rd finger. Teacher places his finger tip on the mid section of the finger, presses it down slightly and vibrates it.

Comments:

UNIT THIRTEEN CONTINUED

Date______ Visit______ Teacher______ Student Name______ Year______

R-6 1b. Sequential actions & follow-through (note-group-note-rest)
1 2 3 4 5 6 7 8 9

MEAN SCORE: 5.16

In sequential action the arm leads, the hand and bow follow. Listen for continuity of sound and smooth bow change. There should be no whipping of the bow but rather slowing down the motion and slight looping of the hand. When releasing the bow from the string, the hand, fingers and bow continue the motion in the air.

Comments:

R-7 1a. Slow détaché--upper half (simple). 1 2 3 4 5 6 7 8 9

MEAN SCORE: 6.57

The bow crosses the string at a right angle; there is an opening and closing of the elbow joint. The fingers and wrist are flexible.

Comments:

UNIT FOURTEEN

R-4 6. Slurred string crossings--long bows. 1 2 3 4 5 6 7 8 9

MEAN SCORE: 5.82

The bow and arm smoothly glide from one string to the next. Avoid sudden and jerky leaps during string crossings.

Comments:

L-4 2a. Long free shifts--use bow "The Ghosts."
1 2 3 4 5 6 7 8 9

MEAN SCORE: 5.18

The left arm freely glides up and down with leisurely, long movements between the first and high positions. The 3rd (or 2nd or 4th) finger touches the E string and becomes quite straight in the high positions. Long bows are used and a swishing sound is heard.

Comments:

R-5 4. Martelé--staccato stroke. 1 2 3 4 5 6 7 8 9

MEAN SCORE: 5.72

There is a distinct pop in the attack and the bow comes to a stop between notes. Avoid unpleasant noises or choked sounds when stopping the bow.

Comments:

UNIT FIFTEEN - EVALUATION CRITERIA & FORM

Date_______Visit_______Teacher_________Student Name_________Year_______

R-4 7. Long slurred strokes on one string. 1 2 3 4 5 6 7 8 9
MEAN SCORE: 6.77

The bow stroke is evenly distributed. In whole notes the player arrives at the middle of the bow on the 3rd beat; in half notes, the middle is reached on the 2nd beat. The left hand finger action is decisive; the pitch changes are distinct.

Comments:

L-5 3. Vibrate on back of right hand. 1 2 3 4 5 6 7 8 9
MEAN SCORE: 6.20

The vibrato movement is balanced. There is a slight upper arm roll as the fingers swing back and forth on the hand.

Comments:

UNIT SIXTEEN

L-3 3. Horizontal finger movement. 1 2 3 4 5 6 7 8 9
MEAN SCORE: 6.00

Alternate notes, using the high and low positions of the 2nd and 3rd fingers. In the low position the finger is more steep than its high position. The hand is not moved when going from F to F#, G to G#, etc.

Comments:

L-4 3a. Shuttle: match stopped & harmonic octaves.
1 2 3 4 5 6 7 8 9
MEAN SCORE: 5.00

The student plays octaves with 0-3 fingering alternately with 0-4 (harmonic) on the same string. The tone of the harmonic is acceptable, and the fingered octave is in tune. (The strings must be tuned well.)

Comments:

UNIT SEVENTEEN

L-1 3a. Tuning. 1 2 3 4 5 6 7 8 9
MEAN SCORE: 7.37

The pupil draws the bow on two strings while the teacher tunes. The tone is solid, and the bow does not vacillate between the strings.

Comments:

R-6 1c. Sequential actions & follow-through. 1 2 3 4 5 6 7 8 9
(group-note-rest)
MEAN SCORE: 5.50

The wrist and fingers are relaxed when playing the group. After the single note the bow is released with arched movement.

Comments:

UNIT SEVENTEEN CONTINUED

Date_______Visit_______Teacher_________Student Name_________Year_______

L-3 4a. Finger movement across string. 1 2 3 4 5 6 7 8 9
MEAN SCORE: 6.20
When the player crosses to an open string from a finger, the finger is held down, but it must not touch the next open string.
Comments:

4b. Hold fingers down--double stops. 1 2 3 4 5 6 7 8 9
MEAN SCORE: 5.71
Test the notes produced by string crossing by playing them as a double stop. Repeat until it is tuned in.
Comments:

UNIT EIGHTEEN

R-7 1b. Slow détaché--upper half (accented). 1 2 3 4 5 6 7 8 9
MEAN SCORE: 6.83
The bow is changed with accent; the bow change is sudden and fast. The stick bends during the bow change.
Comments:

L-4 2b. Shuttle variation, the "Flute"--long free shifts played with the bow. 1 2 3 4 5 6 7 8 9
MEAN SCORE: 5.57
The left arm freely glides up and down with leisurely, long movements between the first and high positions. The 3rd (or 2nd or 4th) finger touches the string. It becomes quite straight in the high positions. Long strokes are used, and the harmonic series of the open string are heard. (Use any string.)
Comments:

UNIT NINETEEN

R-6 2. "Wandering" strokes--wrist & finger flexing. 1 2 3 4 5 6 7 8 9
MEAN SCORE: 5.66
There is flexibility in the wrist and fingers as various rhythm patterns are played with smooth but short détaché strokes. The point of contact is constantly shifted between tip and frog, and a slight looping of the stroke is in evidence, either in clockwise or counterclockwise direction.
Comments:

UNIT NINETEEN CONTINUED

Date______Visit______Teacher________Student Name________Year______

L-5 4. Silent vibrato preparation on string. 1 2 3 4 5 6 7 8 9
MEAN SCORE: 5.83

Vibrato movements are practiced in rest and regular position in the following ways: a) the finger is off the string. b) 3rd finger touches the string and slides back and forth. Thumb is used as pivot in both a and b. The movement is relaxed and even, the arm is balanced, and the upper arm rolls a little as the hand swings back and forth. The down-up movements are not separately motivated. c) with the thumb off the neck, the finger pivots on the finger tip, which now presses the string. The right arm may aid in holding the violin. d) Both the thumb and finger are engaged in holding the string down while doing the vibrato movement. In b, c, and d only one finger is kept down on the string.

Comments:

UNIT TWENTY

L-2 3. Low placement of first finger. 1 2 3 4 5 6 7 8 9
MEAN SCORE: 7.33

The low first finger placement is achieved without losing the 3rd finger's octave location and without shifting the hand down.

Comments:

R-4 8. Long strokes followed by release. 1 2 3 4 5 6 7 8 9
MEAN SCORE: 6.33

Note and rest combinations are played with the whole bow. The hand and fingers follow through the stroke during the rest. There is a slight upward arching of the stroke during the release.

Comments:

R-6 1b. Sequential action and follow-through (note-rest-note).
1 2 3 4 5 6 7 8 9
MEAN SCORE: 5.83

The arm slightly anticipates the hand-finger-bow movement during the change of bow.

Comments:

R-3 4c. Finger movement across string--preparation for string crossing.
1 2 3 4 5 6 7 8 9
MEAN SCORE: 4.25

The finger of the second note is placed on the string a fraction ahead of the bow. The "old" finger is held down until the string crossing is completed.

Comments:

UNIT TWENTY-ONE-EVALUATION CRITERIA & FORM

Date______Visit______Teacher_______Student Name_______Year______

L-2 4. Whole step pattern (1 2 3 4 fingers). 1 2 3 4 5 6 7 8 9
MEAN SCORE: 8.50

The whole step pattern is in tune. The octave position of the 3rd finger is unchanged. The 1st finger is pulled back and the 4th is extended upward.

Comments:

L-5 5. Vibrate while bowing on open strings. 1 2 3 4 5 6 7 8 9
MEAN SCORE: 4.40

While using long strokes on the open strings, the player performs even vibrato movements. A slow intensity vibrato is heard.

Comments:

UNIT TWENTY-TWO

R-6 3. Sustained tones--strength, flexibility, even division.
1 2 3 4 5 6 7 8 9
MEAN SCORE: 6.50

Long sustained tones are played with even bow division. In whole notes the 3rd count is at the middle, etc. The bow is drawn near the bridge.

Comments:

R-7 2a Sustained tones--strength, flexibility, even division.
R-4 9. 1 2 3 4 5 6 7 8 9
MEAN SCORE: 5.16

Pull and push the bow against resistance of the right hand. In the down-bow pull, the fingers bend slightly more than in the up-bow push.

Comments:

L-4 4. Stepwise shifts. 1 2 3 4 5 6 7 8 9
MEAN SCORE: 3.00

Play "Hot Cross Buns" or "Claire de la Lune" in the first position. Repeat in the 2nd, 3rd, 4th, etc. positions. Use "ghost tones" (either left hand pizzicato or with the bow) to test the initial pitch in the new position. The position of the hand remains consistent in the new position.

Comments:

UNIT TWENTY-THREE

L-4 5. Shift in well-known pieces. 1 2 3 4 5 6 7 8 9
MEAN SCORE: 2.00

Include shifts in pieces such as "Mary Had. . .," "Lightly Row," "Barcarolle," etc. The position of the hand remains consisten in the new position.

UNIT TWENTY-THREE CONTINUED

Date_______Visit_______Teacher_________Student Name_________Year_______

L-1 10. Correct sitting position. 1 2 3 4 5 6 7 8 9

MEAN SCORE: 6.66

The weight is partially supported by the feet. Do not lean back in the chair.

Comments:

UNIT TWENTY-FOUR

L-5 6a. Vibrato preparation: tap & hold finger down (without bow). 1 2 3 4 5 6 7 8 9

MEAN SCORE: 4.50

Tap the finger on the string like a whip, then continue shaking the hand with the finger holding the string. When the action is repeated the left arm should be relaxed (elbow slightly moved to the left).

Comments:

R-7 3. Fast détaché repetition. 1 2 3 4 5 6 7 8 9

MEAN SCORE: 6.25

Use short bows at the middle. The elbow joint is not stiff. The fingers are rounded. The wrist is relaxed.

Comments:

UNIT TWENTY-FIVE

L-4 Student tunes--using bow. 1 2 3 4 5 6 7 8 9

MEAN SCORE: 4.50

The students tune their own instruments, drawing the bow on two strings at once and recognizing when the 5th is pure.

Comments:

L-4 6. Shifting: scales & arpeggios on one string using the same finger. 1 2 3 4 5 6 7 8 9

MEAN SCORE: 2.00

One string scales and arpeggios are played using the same finger. The lower fingers are kept on the string. Shift with smooth movements--no jerking.

Comments:

R-6 4. String crossings--wrist & finger flexing. 1 2 3 4 5 6 7 8 9

MEAN SCORE: 3.66

There is flexibility in the fingers and in the wrist during the bariolage-type string crossing. The fingers become slightly straighter at the very end of down-bows and are more curved at the very end of up-bows.

Comments:

UNIT TWENTY-SIX - EVALUATION CRITERIA & FORM

Date______Visit______Teacher________Student Name________Year______

L-5 6b. Vibrato preparation: tap & hold finger down--use bow.
1 2 3 4 5 6 7 8 9

MEAN SCORE: 6.00

Alternate open strings with the 2nd or 3rd finger. Use bow strokes of approximately 1 or 2 seconds' duration. Throw the finger with a whip-like motion against the string, then hold it there and vibrate.

Comments:

R-7 2b. Sustained strokes--even division (two strings).
1 2 3 4 5 6 7 8 9

MEAN SCORE: 4.50

The bow is drawn slowly and evenly on two strings. In whole notes the 3rd beat occurs at the middle. The bow is firmly held and the fingers are slightly more curved during down-bows than in up-bows.

Comments:

UNIT TWENTY-SEVEN

L-2 2b. Playing octaves (1-0 fingering). 1 2 3 4 5 6 7 8 9

MEAN SCORE: 5.33

The student is aware of the octave relation between the 1st finger and the 2nd open string to the right, and is able to match the 1st finger with the pitch of the open string.

Comments:

R-7 1c. Slow détaché--upper half (expressive). 1 2 3 4 5 6 7 8 9

MEAN SCORE: 5.00

The bow is drawn smoothly in the upper half and is changed with smooth articulation, as with a soft consonant in singing. The bow hair is at right angle to the string.

Comments:

L-4 3b. Shuttle: match stopped octaves on the same string.
1 2 3 4 5 6 7 8 9

MEAN SCORE: 5.75

Play a note in the 1st position with the 2nd or 3rd finger and match it on the same string an octave higher in the 8th position.

Comments:

UNIT TWENTY-EIGHT - EVALUATION CRITERIA & FORM

Date______Visit______Teacher________Student Name________Year______

L-5 7a. Vibrato preparation: chromatic finger shifts.
1 2 3 4 5 6 7 8 9

MEAN SCORE: 5.00

The horizontal finger exercise alternates any or all fingers between their low and high placements with slurred strokes. Movements are smooth and create an undulating sound. The finger joints bend and straighten. (The hand must not move.)

Comments:

R-7 4. Tremolo. 1 2 3 4 5 6 7 8 9

MEAN SCORE: 2.00

Play tremolo near the tip with a light sound and relaxed movement. The bow arm must not become convulsive.

Comments:

UNIT TWENTY-NINE

L-4 7. Shifting: play first position tunes in fifth position.
1 2 3 4 5 6 7 8 9

MEAN SCORE: 3.00

Play a simple tune in the 1st position and repeat it in the 5th position of the adjacent lower string. Locate a new position with "ghost tones."

Comments:

L-5 7b. Vibrato preparation: hand & arm shifts.
1 2 3 4 5 6 7 8 9

MEAN SCORE: 3.83

Make arm balancing shifts without the instrument; use the middle fingers on top of the right hand. Do the same with the instrument without the bow, later with the bow.

Comments:

R-7 1d. Slow détaché using various parts of the bow.
1 2 3 4 5 6 7 8 9

MEAN SCORE: 4.33

Détaché bowing is played with flexibility at any part of the bow. There is slight finger and wrist action. The fingers slightly straighten at the end of down-strokes and curve at the very end of up-bows.

Comments:

UNIT THIRTY - EVALUATION CRITERIA & FORM

Date_______Visit______Teacher________Student Name_________Year_______

L-2 2c. Playing octaves with "Percussion Play."
1 2 3 4 5 6 7 8 9
MEAN SCORE: 5.00
Strike the 3rd or 1st finger against the string and recognize the octaves from the slight percussion sound.
Comments:

R-7 5. Sautillé bowing. 1 2 3 4 5 6 7 8 9
MEAN SCORE: 1.50
Play sautillé bowing near the balance point with very short bows. The student can distinguish between détaché and sautillé and can change one into the other. The elbow and wrist joints are flexible.
Comments:

UNIT THIRTY-ONE

L-5 8. Timing vibrato movement for regularity and speed.
1 2 3 4 5 6 7 8 9
MEAN SCORE: 2.00
Make vibrato movement with 4, 5, or 6 full cycles per second. Bump the finger against a finger of the right hand or bump the pegs.
Comments:

R-T 4d. Read rhythms. 1 2 3 4 5 6 7 8 9
MEAN SCORE: 4.66
The student is able to tap or clap simple rhythms from notes or read various rhythms using the instrument.
Comments:

R-T 5. Syncopations, unexpected rhythms (also ensembles for 2 players or groups--see polyrhythms). 1 2 3 4 5 6 7 8 9
MEAN SCORE: 3.16
The student is able to read rhythms containing simple syncopations. He can hold his own in performing a rhythm against another rhythm.
Comments:

UNIT THIRTY-TWO

R-7 6. Tremolo--staccato (slurred staccato). 1 2 3 4 5 6 7 8 9
MEAN SCORE: 1.83
Play tremolo at the tip and combine with a slow up-bow stroke, resulting in slurred staccato.
Comments:

Teachers were asked to rank, in terms of usefulness, the materials that had been developed over the past three years. This manner of forced choices provided a clear indication of the relative value of the materials as perceived by the thirteen teachers who returned the form. This was more valuable than the more general evaluations of each of the items.

Although there had been a lot of discussion of contemporary tunes, they obviously inspired only a few teachers. Most of the teachers did not find them valuable or practical during the first two years of instruction. However, the contemporary tunes were used in the second-year local classes with great success.

The conventional tunes on the tune record rated a surprisingly high 3.27 with 1 as the top score.

The teachers ranked the teachers manuals and films as the Project's most important contribution to string education. Mean scored are presented in Table 11.

TABLE 11

TEACHER EVALUATION OF MATERIALS

1 = Highest

	Mean Scores
Teachers Manuals	1.64
Films	2.09
Tune Record	3.27
Tunes	4.80
Drill Record I	4.90
Drill Record II	6.00
Fletcher Record	6.00
Rhythm Games	6.27
Exercise Book II	6.83
Melodious Reading Exercises	7.67
Sight Reading Materials	8.50
Exercise Book I	8.62
Contemporary Tunes	8.75

Second Wilmette Demonstration of the Chicago Area and Urbana-Champaign Project Classes, June 1, 1969

The real climax of the evaluation efforts was the performance by Project classes before a "blue ribbon" panel of string performers and string evaluators. Letters of instruction to this group are Forms 5 and 6 in Appendix C. The evaluation was three-phased: a meeting of the panel of experts, individual comments of the experts, and a meeting of the teachers with the Research Director. Two members of the Chicago Symphony and the Supervisor of Strings in Kenosha, Wisconsin, augmented the impressive evaluation staff assembled for the first evaluation meeting.

Their formal report, the result of a three-hour working session, is as follows:

Report on Evaluation Meeting on June 1, 1969, after the Demonstration by Project Classes

Evaluators:
Victor Aitay
Shephard Lehnhoff
Stanley Nosal
George Perlman
Marvin Rabin
Robert Shamo

University of Illinois Staff:
Margaret Farish
Thomas Wisniewski

The evaluators were asked to discuss the following questions:

1. What changes should be made in the Action Studies before the material is disseminated to the violin profession?

   a) Are any of the Action Studies "gimmicks," not legitimate teaching techniques?

None of the evaluators considered any of the studies to be irrelevant to the serious study of stringed instruments. They rejected the term "gimmick" as completely inappropriate.

Mr. Lehnhoff stated that the Action Studies are ways of presenting techniques to students, appropriate for children and helpful for teachers.

Mr. Perlman: "Not one thing could be considered a "gimmick" . . . not one thing could be eliminated. The Action Studies provide natural ways of releasing tension. They also add an element of fun, which contributes to the reduction of tension by relieving anxiety." (Mr. Perlman commented on the vibrato film at this time, saying that Paul Rolland's approach is unique, the "most natural, effective, and practical" that he has ever seen.)

Dr. Rabin stated that, to judge materials, one must try to discover if they help the individual teacher improve his work. Good materials serve as a basis for self-evaluation. The Action Studies show teachers how to use their ideas in a more efficient way; they illustrate the necessity of developing devices to build proper techniques. Most important, they present concepts which help students understand what is needed, what they must do to accomplish their own goals. The Action Studies are not "gimmicks," but there is a real danger of misuse by unimaginative teachers. They can become gimmicks if they are presented in a routine fashion as a meaningless ritual. Dr. Rabin added that the pieces performed by the Chicago area classes were objectionable. They did not exploit the bowing techniques and other skills taught by the Action Studies.

Other comments by evaluators: The Action Studies stimulate interest in the basic fundamentals of string playing. The Action Studies do not depend as much on "teacher persuasion" as most technical materials. They are easy for students to perform because of their rhythmic nature.

b) Were any of the action studies poorly performed by a sizable number of students at the demonstration, indicating a need for revision of the manuals?

Several evaluators mentioned improper left arm movements in shifting actions, particularly on glissando. Many students moved the hand from the wrist rather than shifting the arm and hand as a unit.

All agreed that the stance was generally poor in Chicago area classes. Apparently, the teachers do not recognize the importance of proper stance and balance.

Dr. Rabin said that preoccupation with the flexibility of the fingers on the bow interferes with free action of the elbow. Mr. Lehnhoff disagreed. He observed that the children who had flexible fingers also had relaxed bow arms. Mr. Perlman and Mr. Nosal agreed with Mr. Lehnhoff.

Dr. Rabin noted that some students used little bow. The amount of bow used differed greatly from class to class. However, he added that almost all students were able to play in the lower third of the bow with an acceptable tone. This is highly unusual at this stage. The martelé-staccato strokes were improperly executed; articulation was not the same on every note.

Mr. Shamo observed that few students from the off-campus groups followed directions in the manual to achieve a balanced violin hold. Most held the instrument up with the left hand. He suggested that children with short arms might hold the instrument to the right, rather than on the shoulder, to aid bowing. Perhaps some of the smaller children should use the Early (high) Bow Hold for a longer period of time. The left hand techniques were weaker. Many children clutch the neck of the violin too tightly.

Mr. Lehnhoff said that the placement of left fingers was frequently incorrect, in spite of good directions in the manual.

Mr. Nosal pointed out that many children did not curve their fingers on the bow, although the manuals are most explicit on this point. Apparently, some teachers did not work on the bow hold long enough to establish proper habits.

c) Are any bad habits likely to be developed by the Project approach?

Mr. Lehnhoff said that most of the Chicago area teachers had not paid enough attention to intonation.

Dr. Rabin believes that instructions for tapping in the vibrato manual are not adequate. Most students use the fingers only.

Several evaluators pointed out that misuse of shifting studies (previously mentioned) might result in poor habits. Mr. Nosal suggested that some attention should be given to problems caused by unusual or improperly shaped hands.

2. Violinistically, what was the single greatest strength in the group or individual playing?

Mr. Perlman: "Lack of tension."

Mr. Shamo: "Coordination."

Mr. Shamo said that children in the demonstration classes are much better coordinated than most students of similar age and stage of advancement. The other evaluators agreed. Mr. Shamo stressed that rhythmic physical movements are characteristic of Project classes.

3. Violinistically, what was the single greatest weakness in the group or individual playing?

Mr. Nosal: "Stance."

Mr. Shamo: "Poor left hand position when playing on the E string and clutching with the left hand."

Dr. Rabin: "Too many differences in bow hold; in some classes, poor placement of index finger and thumb. (Dr. Rabin observed that, with two exceptions, none of the boys in the Chicago area classes played as well as the girls.)

4. What was the most different from your own teaching?

Mr. Shamo: "Playing on higher strings before the left hand position is set." (Mr. Shamo keeps his students on the D and G strings for a considerable length of time.)

Dr. Rabin: "Emphasis on flexibility of right fingers. Emphasis on raising and lowering elbow when changing strings."

Mr. Perlman: "Totally different approach to accomplish the same goals."

Mr. Lehnhoff: "Flexibility of the fingers on the bow at an early stage."

5. What seems to be lacking or most needed in string teaching, especially with regard to curriculum, methods, or pedagogy?

The evaluators agreed that the greatest need is improved teacher training. Mr. Nosal said that we lack a good curriculum for producing competent string teachers. He believes we need a Teacher Research Center concerned with standardization of methodology, ideology, and materials. It should be a place where the gifted teachers of the country could be drawn together to interact and to make their knowledge available to others.

Mr. Perlman admitted the need for some standardization for clarification but pointed out the importance of individual differences in fine performers. Dr. Rabin added that teachers need the opportunity to become aware of alternatives. They should have access to the techniques and concepts of such teachers as Paul Rolland, Shinichi Suzuki, and Ivan Galamian. It was the consensus of this meeting that many string teachers are not adequately trained, nor are they given sufficient opportunity to improve and develop once they have entered the profession.

The second major phase of the 1969 summative evaluation was the judging by the panel of the actual playing and the rating of each player on items which were in their opinion significantly outstanding, either positively or negatively. A numerical system was devised but not consistently followed. Primary reliance was placed on narrative statements. Coding of these subjective statements can be difficult and often misleading. Although they were coded for interpretation purposes in the Project, they are presented here as stated by the evaluators in order that the reader may gain a better idea of evaluator feeling. The evaluators' difficulty with the numerical rating system was probably due to their unfamiliarity with it; thus, more credence can be placed in these statements.

Comments of Robert Shamo.

School 1. He believed that the violins were "held up" rather than balanced in all but one case. The extended stroke was good for three out of seven students. The fingering was very consistent for one year's instruction. He noted fine facility and exceptionally good intonation.

School 2. He sensed that the teacher was evidently not a string player and he believed it would be difficult to imagine any method that would be completely successful. He felt there was little freedom of movement on the part of any student. He thought there was a misunderstanding about the importance of elbow height. He observed that the left wrist was collapsed with about half the students.

School 3. The fingers of the bow hold were not curved. He remarked that replacement of the bow was perhaps too difficult at this stage. He didn't see the spontaneity that the Project desired. Intonation was only adequate. He commented that the problem in staying together might be helped by rhythmic movement.

School 4. The violin hold showed a strange, forced head position, but the left hand was carefully achieved. The right elbow of one boy was much too low, but the bowing of the others was quite good, as were extended strokes.

School 5. He stated that one boy obviously didn't understand the violin hold. One girl was average, not naturally good, but well-taught. He believed their intonation problems were caused by collapsed hands.

School 6. The bow hold of second-year students was relaxed and flexible. First-year students showed consistently good left hand training, particularly left elbows. Second-year students had fine flexibility in bowing, especially one girl. Intonation, however, was only fair.

School 7. The bow hold of one boy was very secure and balanced. The pizzicato sound was too flimsy, and only one girl showed freedom of movement.

School 8. He noted that the left wrists were collapsed. The left hand thumb and fingers were disappointing in comparison to the excellence of the bow techniques. Even the first-year students showed beautiful, free bowing. Movements was free and not contrived. The tone quality was smooth and controlled, not big but confident.

School 9. He remarked that the violin hold of the first-year students was very poised. However, only the middle of the bow was used and there was no body movement to speak of. The bowing of second-year students was very relaxed, and the tone sounded mature. He commented that use of Project techniques seemed a little conservative, but that the musical effect was about the best.

Schools 10 and 11 (Champaign Schools). He thought the students showed extraordinary facility and musical accomplishment for second-year groups. All children seemed to illustrate Project principles very, very well.

Mr. Shamo made the following general comments. The fly pizzicato seems especially promising, although elbow height seems to be a problem. Wouldn't shorter strokes be more successful? Would the movement of the body in the same direction as the bow stroke be as effective as in the opposite direction to the stroke? On "flute" shifting, is the mobility achieved worth the flaccid hand position that resulted for many students? Some first-year classes sounded better than some second-year classes.

Comments of Stanley Nosal

School 1. He thought that three showed good finger placement, several had problems. Four students had an excellent stance. Bowing was good in general, but string crossings still showed signs of tension. Intonation was above average. Students had major problems in rhythm.

School 2. He noticed problems with finger placement on the bow. Six students did not hold the violin on the collarbone. He rated intonation a 2, rhythm a 3.

School 3. Fingers were not rounded, the violin hold was insecure, and there was not one correct stance. Some hooked left thumbs around the neck, indicating left hand tension. Facility was somewhat jagged, and freedom of movement was rather limited. He rated intonation, rhythm, and phrasing a 2.

School 4. All stood with feet together. One student hunched the left shoulder. Intonation and rhythm were rated a 3, phrasing a 2.

School 5. Fingers of bow hold were stiff for both students. Both tilted the violin too much. Both stood incorrectly with the left foot too far forward. Left elbow position was too far to the left. Intonation he rated a 3, as the instruments were not in tune.

School 6. Generally, both classes were excellent, showing very good facility and freedom of movement. Intonation and rhythm were rated 4. Fingers of the right hand, even in the first-year class, were relaxed and were beginning to move. Two of the second-year students tilted the violin too much. Two leaned too far backward, but the others were fairly well-balanced.

School 7. He noted one boy with good finger angle but believed the class had real problems with stance. Facility was somewhat limited except for the one boy.

School 8. String crossings were good and bowing motions were free. He rated intonation, rhythm, and phrasing a 4. Freedom of movement was outstanding, the best so far.

School 9. He stated that these classes were very outstanding with good bow hold and stance and excellent left hand position. He rated first-year students 3, 3, and 4 in intonation, rhythm, and phrasing, respectively. Second-year students rated a 5 in each of these areas.

School 10 (a Champaign School). Tone quality and control were praised highly. Freedom of movement was almost overdone.

School 11 (a Champaign School). He thought the teacher was fantastic.

Comments of Victor Aitay

School 1. He described the bow hold and the stance as outstanding but rated the left hand, thumb, and fingers a 2.

School 2. He rated bow hold a 3.

School 3. Violin hold was average.

School 4. He gave violin hold a 3.

School 5. Violin hold received a 4, intonation a 5.

School 6. He rated the bow hold of first-year students a 5. Bow hold of second-year students was average.

School 7. One boy showed outstanding left and right hand positions. Stance rated a 2.

School 8. One girl had an outstanding bow arm. Violin hold received a 5.

School 9. There was an outstanding girl in the first-year class, and the second-year class received a 5 on bow hold.

School 10. The cello playing was outstanding. Bow hold rated a 5.

School 11. One girl was outstanding.

Comments of George Perlman

School 1. Finger contact in the bow hold was a bit rigid. Violin hold was generally good, but stance showed some irregularities. Bowing was only fair.

School 2. The bow hold was less than exact. In general, the bow-bridge relationship was irregular, and the freedom of movement was fair. Intonation and rhythm were good. In general, the low position of the bow interfered with the natural stroke.

School 3. He felt the bow hold little finger rigid (not sufficiently bent), and the violin position was too low. Bowing and intonation were fair.

School 4. Bow hold, stance, and violin hold, bowing, intonation, and rhythm were good.

School 5. The bow hold and bowing were good, but the violin hold was not according to instructions. The stance was not uniform. Intonation was only average.

School 6. The bowing of the first-year students was excellent. Their left hand position was only fair, but their intonation was better than the second-year students. Both classes showed good bow hold, violin hold, and stance.

School 7. He thought the bow hold was excellent. The violin hold and stance were good.

School 8. The bow hold was the best so far, and bowing was excellent. Violin hold, stance, and fingering were good. The students were very relaxed and showed good freedom of movement. Mr. Perlman commented that the teacher appeared to be doing exceptional work and the children seemed enthusiastic and alert.

School 9. He remarked that the teaching was splendid and that the young soloist played with excellent phrasing. Bow hold, stance, left hand position, and bowing were good; violin hold was excellent.

School 10 (a Champaign School). This was beautiful work. Body relaxation was exceptional. The bow hold and bowing were exceptional and all other items were good.

Mr. Perlman was enthusiastic about the Urbana-Champaign class.

Comments of Shephard Lehnhoff

School 1. One student had a very good bow hold and bow arm. He thought the left thumb and fingers were generally good. Intonation was generally good.

School 2. The bow hold of one boy was very good.

School 3. The left hand position was good, considering the length of the instruction. Intonation was only fair.

School 4. There was one very good left hand position.

School 5. One left hand was good, one average. Intonation was fair.

School 6. The bow hold was good in both classes. In the second-year class all children stood correctly and held the violin well.

School 7. One left hand position was outstanding. Intonation was fair in the older class, much better in the younger group.

School 8. He thought all students showed good bow hold, violin hold, stance, left hand,bowing, freedom of movement, and tone quality. Intonation was fair.

School 9. The bow hold of all first- and second-year students was exceptionally good.

School 10 (a Champaign School). The intonation and tone quality of the celli were excellent. Generally, the violin hold was very good. The bow hold was described as outstanding.

Comments by Marvin Rabin

School 1. The bow hold was fine for a first-year class, although several students hooked the first finger. The violin hold, facility, and freedom of movement were O.K., the bowing, average. The left hand position appeared fine, and intonation was quite good. He pointed out that the class needed to pull or focus more sound. The notes died out, affecting the rhythm and phrasing.

School 2. The bow hold and stance were O.K., and most of the children held the violin correctly. Freedom of movement was average. The bowing was inhibited. The left hand position varied from fairly good to poor. The tone lacked focus; a better sound concept was needed.

School 3. The bow hold and rhythm were O.K., the violin hold, average. Long notes were not sustained, and there was no phrasing. A second finger problem marred the intonation.

School 4. The bow hold was varied, but the violin hold was O.K. The fingering of three of the students was above average. One child had a very good bowing technique. The fact that notes died out affected the phrasing and sound. He believed the fine pizzicato work in this school had a favorable effect on bowing articulation.

School 5. The violin hold and bow hold were fair. The position of the feet was O.K., but intonation was poor.

School 6. The bow hold and violin hold were good in the second-year class and even better in the first-year group. The bowing was good, but more variety of bowings were desired.

School 7. In general, the bow hold and violin hold were good, but a few students were weak in these areas. No phrasing was exhibited.

School 8. He commented that something really happened in this school! The sound was good and bowing excellent. The students played with vitality and showed enthusiasm. The bow hold, although different from the Project approach, was O.K.

School 9. He remarked that this class was the closest so far to the Project Director's total concept. The stance, freedom of movement, and sound were marvelous.

School 10 (a Champaign School). The sound was excellent. Every left hand was fine and most right hands were great.

School 11 (a Champaign School). He thought that this teacher was fabulous and the class fantastic, the best so far. All students exhibited excellent tone quality and control. He praised the rhythmic vitality.

Urbana Class. This class was absolutely great.

Dr. Rabin commented that he would like to hear more variety of bowings in all classes. The pay-off should not be only legato-détaché pieces.

The numerical tabulation from this evaluation is found in Table 12.

TABLE 12
NUMERICAL TABULATION OF CRITICS' COMMENTS

Rating Scale:
5 - Outstanding
4 - Above average
3 - Average
2 - Below average
1 - Poor
(The Urbana-Champaign class was not rated.)

	SCHOOL CODES:											
TOPICS	1	2	3	4	5	6	7	8	9	10	11	All Schools Averages
Bow Hold	4	3	2	3	3	4	4.5	4	5	5	3	3.68
Violin Hold	3	3	2.5	3	3	3	4	5	4.5	5	3	3.63
Stance-set	3.5	3	1.5	3	2.5	3	2.5	5	4.5	5		3.35
Left hand, thumb, fingers	3	2	3	4	2.5	4	4	4	5	5		3.65
Bowing	3	1	2	4	4	4	4	5	5	4.5		3.65
Fingering	4	4		3		5	2	4.5	5	4	5	4.05
Facility	4		2				2		5	5	5	3.83
Freedom of Movement	3	2	2				2	5	3	4		3.00
Tone Quality and Control	2	2			5			3	3	5	5	3.85
Intonation	4.5	2	2	3	2.5	3	3	3	4	4.5		3.15
Rhythm	1	2	2	3		4		4	4	4	5	3.22
Phrasing	2		2	2			1	4.5	5	5	5	3.31
Individual schools-Averages	3.08	2.4	2.1	3.11	3.21	3.75	2.9	4.45	4.42	4.66	4.57	

The third phase of the Wilmette evaluation was a structured session with the teachers. In an effort to elicit response, some questions posed were provocative, some were leading, and some were straightforward. The following is a complete transcript of this two-hour meeting.

TRANSCRIPTION OF TAPE OF TEACHERS' MEETING AT WILMETTE EVALUATION
June 1, 1969

Moderator: There have been some theses written recently in which children were asked what tunes they liked to play. Many replied that they just hate "Mary Had a Little Lamb." We used this tune and similar ones in the Project. What is your opinion on this?

Teacher: I think it's just a matter of their disliking something that is overused after they've learned it, and "Mary Had a Little Lamb" is one of those songs you can overuse. It's not a song that you can do many bowing techniques with. Well, you could, but there are much better songs that you could use for a longer period of time without students losing interest in the song itself. "Mary Had a Little Lamb" doesn't carry much musical weight.

M. Would you be willing to make a statement on what you think the most important use of the record is? Is it for motivation? Is it to help kids learn to play in tune? Is there a reason?

T. So they'll have something to practice at home . . .

T. Motivation . . .

T. I think teachers have to decide: are you going to teach a kid to play a tune, or are you going to teach him to play the violin? I much prefer to teach the kid to play the violin. O.K., who's going to teach him to play a tune? He's not going to go home and stand in front of a mirror for a given amount of time and do all this on two or three notes. So why not give him this record? Every month the parents get a sheet listing all the tunes the child is supposed to learn by the end of the month and as much of the "Action" work as can be described. This is what's expected of them. Of course, if they want to go on and do more, fine. Some can go beyond. I just expect a certain amount of material to be completed. If they don't do it, I say, well, what's wrong with you? This way they're spending enough time getting the fingers strong enough to play. Each time they put the finger down right, each time they play in tune, each time they play with a nice tone quality, each time they hear a nice sound, they're getting that much closer to playing the violin well. So this is invaluable. The more records you can get like this, the better. Terrific.

M. So you wouldn't ever go back to teaching without records?

T. No. Never.

T. I was going to add the fact that the records give the idea of a good violin sound. The proper rhythm and the feeling of an accompaniment behind it is a valuable thing on the record.

T. I had several parents comment to me that the record seemed to ease the parent problems at home. It may be off the subject, but the fact that they made a point of mentioning it must have made some difference to them.

T. I think the use of a record will help a child who is not having too many problems to move along much quicker than, say, the class itself. Maybe many of our students are doing more advanced songs on their own, despite what is being done in class. This has been nice, because students have not become bored in the class as compared with what happens when everyone is on page thirteen and nobody goes to fourteen.

M. Some of the Project staff and teachers apparently felt the tune record was not adequate. Since there wasn't enough drill, the drill records were produced. Anybody want to comment? Are the advantages the same? Did you feel the drill record was a necessity or is it something we could just do away with?

T. I liked the drill records better for class instruction. The tunes are great at home. I don't really think they practiced with the drill records at home.

T. The drill records were nice in the class. They could be put on and then I could move around to help. I didn't have to be up in front talking.

T. They may be a little too boring for the kids at home. That's why I used them in class work. I think they're very valuable.

M. Are you talking about both drill records?

T. Just the first one.

M. Has anybody used drill record two?

T. Yes.

M. Do you have the same comment?

T. I've used both of them, and I'd like to say that there again they're great because of the parent response. Since the exact pace is set, it's as if the teacher is right in the room. Sometimes the parents have told me that they can almost visualize the teacher there, because they've done this in class. It leaves no doubt about how they are to practice and what they are to practice.

M. But what is missing from the records?

T. I think what is missing from the records is what we talked about before--the assignment. Especially the drill record. Unless you say "You do band three," they don't do band three. The clue to using these records and the effect are determined by how the teacher assigns them.

M. Is all the material you feel necessary for teaching violin for the first two years on these records? Or are there some areas such as rhythm, rests, and so forth that you think should have a supplement? Perhaps you have not thought about that? By supplement, I mean the materials just weren't intensive enough in rhythm training. What drills did you use that are not on the record?

T. I'll tell you what you could improve--the little booklets. They're too small, and they flop shut. We used Müller-Rusch as drill work. The kids seemed to go so much faster just because it was bigger. The little books didn't stay on the stands. Students don't care if they fit in the case.

M. They crammed those big ones in anyway, didn't they?

T. That little book was very poorly constructed to be printed. Is it handwritten? Yes, it should be printed; it should be big. And who cares if it fits in the case, you know?

T. There are a few clef and meter errors; you've probably been notified of those.

M. We have an item called Rhythm Games. I'm not sure how many teachers used them. Do you know what we mean by Rhythm Games? Do you have any additional comments? Do you think they're the same as the records we've talked about so far?

T. Well, I think if you're going to get the child playing independently and recognizing rhythmic symbols, you have to depart from the use of a record somewhere. They can play and imitate rhythms played on a recording, but can they look at music then and do it on their own? I think the Rhythm Games are very valuable.

M. Should we have more? Are there too many?

T. No, I think they're fine, too. We use them a lot.

T. I didn't use them much. I probably could have used them more than I did, but I sort of felt the problem wasn't so much the division of the beat as the extension of the beat--for instance, the half note or dotted half note.

M. One thing I'm leading up to is that obviously there's too much material in the Project so far, and if we're going to turn out a two-year curriculum we're going to have to delete something. Professor

Rolland's class uses exclusively Project material, and they still haven't gobbled up all the material he's produced. The question is: can we just chop off, say, the first half of the Rhythm Games, the first half of the tune records, and the first half of the drill records, or would we have to go through the whole record to have a sound foundation? Some of you used 75 percent Project materials and some of you used 20 percent Project materials. I don't know whether we can tell any difference or not.

Well, let's go on to the Fletcher tunes, which the composer permitted us to use. We used them mostly in the second-year classes. Do you use the Fletcher tunes? Why? What's good about these?

T. Oh, I love the Fletcher tunes, because, by and large, they're written in today's idiom. They aren't so classically oriented. The children love them, and there's a lot of rhythmic variation and a lot of melodic variation. They also give experience with different meters. I think they're very fine.

M. Do you know that there's a structure to the sequence, that each one's a problem? Will it confuse violin teachers if we suggest that this tune is designed for this problem and so on?

T. I wonder about the Fletcher tunes as far as mixed classes go. I think there are very nice violin, and, possibly, viola tunes and also some very nice cello tunes if you select them, but they won't all work for mixed classes. This is the only question I have about them. I think they're excellent and worthy of being used. When do you think they'll be expanded into a mixed class concept?

M. This is being done now.

T. Oh is it? Then they could be used. My classes meet in both lesson and orchestra situations, but I can't use them for follow-through in the orchestra situation. If the Fletcher tunes are arranged for mixed classes, I would be very interested in using them, because it is good music.

M. Now are the Fletcher tunes first-year or second-year materials, in your opinion, or in your school system?

T. Some first-year, mostly second year.

M. But the early ones can be used?

T. Yes. Since each tune presents a problem, could this problem be explained somewhere on the sheet so the student would be reminded what he is working on?

M. Did anybody use the contemporary music commissioned under Margaret Farish's project?

T. Not much.

M. And where does it fit into a curriculum?

T. You could hardly use the contemporary pieces in a large class situation where you have various levels of ability. However, for the talented student, or for somebody who needs a little more enrichment, they're marvelous.

T. I agree. Since the children will eventually play contemporary music, there is real value in giving them a background for it with these relatively simple examples. However, I think these tunes can be taught too soon. The children have to have a feel for the sound of the instrument, reasonably good intonation, and good fiddle position. If they have these things, then they can do beautiful work with these contemporary tunes. You noticed this today when you heard the Urbana children perform some of the contemporary tunes very musically.

M. Is their playing of "Mary Had a Little Lamb" or "Hot Cross Buns" any more musical than a contemporary piece? It's something that has to be taught no matter what the music.

T. You see, with "Mary Had a Little Lamb," the thing rolls--like a tape recorder in the head. It's programmed in the head to sound the way the child is going to play it. Whereas, in contemporary music, what background has that child had for this contemporary tune?

T. But it seems to me, the longer we wait to present the contemporary idiom to the children the more trouble we're going to have.

T. True, but don't you think there is a point of readiness? There must be a concept. And if there isn't, or if it's sort of nebulous, I don't think you're going to get an appreciation for that certain thing. Eventually they might after they've done it a few times, but, still in all, I think they have to have some competence. The student should not start with a contemporary idiom. He should start with "Mary Had a Little Lamb," which he could play more proficiently. In other words, the sequence we use is important.

T. But which of these has relevance?

T. Well, what has relevance is what I'm referring to as their everyday hearing. What do they hear more, Bach or the jazz beat and the modern idiom of pop music?

T. Well, you know kids; they like hamburgers because they know hamburgers, and because they're the popular thing.

M. What concepts does a student need in order to play the contemporary pieces that one doesn't need to play "Mary Had a Little Lamb?" If you're talking about position and tone . . .

T. There's a subtlety involved in the contemporary idiom. I like to dabble around with composition, but if I don't have a feel for it, or a particular preparation for it, I can't compose just because somebody says compose something.

T. Did you hear what that little girl composed?

T. Yes.

T. Gee whiz!

T. It sounded great!

T. A lot of these little kids don't have "Mary Had a Little Lamb" engraved in their heads as much as you or I, and they don't have the hang-ups we do.

T. They know the Beatles tunes.

T. Popular music of today sounds a lot different from ten years ago.

T. They're really using a dissonant sound and are very willing to accept it. My kids didn't need any preparation at all for the contemporary music. They just ate it up. They thought it was great. I didn't prepare them and I didn't expect them to like it as much as they did.

T. I don't know if I should say this or not, but I assign pieces for certain reasons. One student had a rather severe intonation problem which wasn't being solved by playing the pieces he'd heard and known all the time. However, he was actually forced, in a couple of these pieces, to listen to a seventh and a minor second, and he was forced to match pitches. For some reason, a lot of things fell into place intonation-wise. This may seem crazy, too, but, believe it or not, a lot of these severe intonation problems arise because the students are not actually forced to listen and analyze. The contemporary pieces taught these kids to listen and analyze. They still weren't out of the woods, of course, but they were ready to listen. It brought a certain clarity of playing, too, because these pieces have no hang-ups. One of them is good for this, and one is good for that--very much the same as with the Fletcher tunes. I've found that if you choose and assign the pieces carefully you have some very good material which I think belongs in the Project. That's why it was put there, wasn't it?

M. Yes. Now, to change the subject, we said at the beginning of the Project that the materials were supplementary to any method, but my thinking is so fuzzy that I'm not able to see what is supplementary. If I go around the room and ask you if you used some other material besides the Project material, would you state why you used the material? Why did you use some of the things you've always used? Because you're comfortable with it, because it's a little more effective, or because you know it? Of the twenty centers, one center used a little bit, and one used a lot of the Project materials. Would you like to say something about that first?

T. I'd love to. In class we used 100% Project material for my first- and second-year classes. No, I take that back. In the second-year classes I did have the students learn a solo from legitimate contest literature. However, these students were also scheduled in an orchestra situation second semester.

M. Otherwise, you used all Project materials?

T. In class.

T. I used 100% Project materials. I saw no need for another method, nor time for another method.

T. Well, when I started my class this year, I was a little confused about assignments. I felt the need to hang onto something I could definitely write down and assign, so I used Müller Rusch. However, as I got into the Project, I realized I didn't need the other material as much as I thought. But, yet, I was afraid, also because the format of that book was so flimsy. Anyway, the kids picked up the drill record materials by ear. They didn't read the notes, I learned, because the book wouldn't stay open. Since I was afraid they wouldn't learn to read notes, I used Müller Rusch, but I didn't push it as much as I thought I would have to . . .

T. I'm a poor example because you know I started in January and was really swimming for awhile, but we had to do a lot more with note reading because there's such a strong pressure to play in an orchestra. They have to play with an orchestra the minute they get their violins. So, I had to spend most of the time teaching them orchestra music instead of Project music. The Project suffered a bit.

M. Did you just use the orchestra music, or did you use something else to teach it?

T. We also had a method book, but by the time I got through with all of the Project material, the poor method book got laid aside, too. We had the Work and Play book which I intended to use.

M. If you had all the Project materials would you still use Work and Play and some Project materials because it makes a better total package?

T. No, I think I would get rid of the method book next year. At first I just had to figure out the organization of the Project. If I could have figured out what to do with it, I would have been O.K.

M. I used Project materials 100%. There's enough there. In fact, too much. I still have plenty of material.

M. You're not worried about the music reading or anything else?

T. No.

T. I used the Project materials along with the Müller Rusch since I had other classes. These students in my Project class met once a week after school as a Project class, and then, during the week, they had to fit into the regular school schedule. Since they were with the other kids who weren't using exclusively Project material, they had to have a book so they could fit into the other classes. I found with the kids using the Project materials, I used the Müller Rusch less and less as the year went on. There were a lot of things I used to stress from Müller Rusch that I didn't need to stress in my Project class. It was covered much better by the Project materials.

M. Was this your decision, or do you think the students had a tendency to want to use the Project materials instead of the Müller Rusch, or the other way around?

T. Well, I think the Project materials are more interesting to the students, especially the records. The songs are pretty similar. A lot of the songs from the Müller Rusch do not interest them, anyway.

T. I used the Project materials solely in classes. The only time I used anything else was in the orchestra situation. Since they memorized all their songs, I'm not sure whether they learned to read notes or were playing by ear or by rote. When they got into the orchestra situation, their note-reading was reinforced. As others have said, there's just too much Project material. The one thing I didn't use was the sight reading supplements. There's just not enough time for everything.

M. O.K., that was something you could dispense with because they got that in the orchestra music.

T. No, it was because there wasn't enough time for it.

M. O.K.

T. One of my biggest concerns was the practicing problem. Three-fourths of my kids using a book have something very definite to practice, and so we used the Müller Rusch book in the Project class quite a bit in the beginning stages. But then I found if I wrote down an assignment sheet and asked the students to mark it off to show proof of practicing, they learned much more. I think a method book could be done away with. Instead, I'd like to use a book of tunes like the Fletcher tunes or something like this. I would never teach without a book or something for them to have their eyes on, just for reference, if for no other reason. I couldn't agree with a complete rote approach. In many cases, especially my second-year students, they did not do as much of the rote Project materials at home as they should have--I don't know how to solve this problem.

T. Well, I've had a class get nowhere, and this year I have a first-year class get somewhere. Last year I used 100% Project material. The one problem I found is the reading. This was solved last year because of the orchestra situation--I had no problems. This year I have the only class, and next year we'll have a whole new string program with one isolated class. There won't be any orchestra. I found it necessary to give six of my eight kids supplementary songs, so they could play songs by reading the notes.

T. I used the Listen and Play book besides Project materials for two reasons: one is that I'm very fond of the tunes that are in there; another reason is that only one school is a Project school and the rest of the schools are not. I wanted the other children to be able to have a record and also to use this same method which is just about--maybe just about--as good as the Project, and so I kept uniformity from one school to the other by use of the Listen and Play approach. All the children can have one record along with the other Project materials. These are the only materials that I used other than Project materials.

M. O.K. Who's next?

T. 100% on the Project. With special appreciation for the Fletcher-Rolland tunes! We played about eight of those for our Elementary Spring Festival, and Mr. Fletcher gave me permission to orchestrate them. We have a Junior High-Senior High Orchestra that accompanied them, so it was a large chamber orchestra, and it sounded great. You'd be surprised how over 100 little kids played these tunes with quality and all of a sudden it sounded quite different. We had Mr. Fletcher in attendance, and he was pleased about this. As far as the Fletcher-Rolland tunes, I'm very, very fond of these, and the children are very fond of them. I tried to relate the Action Studies as cogently as possible to the Fletcher-Rolland tunes, because the youngsters would practice these. Now we have a class Thursday after school for an hour and half, and there were about thirty-five or forty children in that class. They came as a volunteer group. These kids got their first indoctrination with these tunes. When we first got them, we just handed them out, and it gave us a chance to get together and practice, extra time, you know, and they just fell in love with them right away. So we ran the films along with the tunes, making it a very productive session. We got a lot of knowledge, what you want to call good fiddle knowledge, out of this selection of Fletcher-Rolland tunes.

T. I used 100% Project materials except in rhythmic drills, and since I teach the Kodaly method in the classroom with these same children we have many, many rhythm charts and rhythmic drills. I decided to use those that the children were used to, rather than a lot of the rhythmic drills that were part of the Project materials. I did very much like the idea that I wasn't book-bound for a change. I didn't use a method book at all, and I found that that allowed me a much greater sense of freedom in my teaching. Even though we were to teach certain things at certain times, the children seemed to enjoy it more than being book-bound. As in some of the other schools, we do have a beginners' orchestra, and, as soon as the children learn first and second fingers, they're supposed to go into the orchestra. But this year, I was rather lucky, because this was a great excuse for saying, "well, we're concentrating on other things. We're concentrating on Action Studies this year, not so much on notation." And it was accepted well by the orchestra director. I think being able to take out notation when you don't want it and put it away for a while is a great thing to do, rather than following the book. I enjoyed using the Project materials.

T. I used 100% Project materials at the school where I taught. They were all strictly beginners. In fact, the school has never had a string program before, and there was no problem about somebody's having already started. There was one little boy from the sixth grade who used to come in every once in a while and sort of sit in with the class, but I got along just fine with the Project materials alone. The only problem was that the kids seemed to want to go on with the tunes, and they wanted a new tune every time, instead of working on the Action Studies. However, they worked on the Action Studies, too. I might say that this was very well received. In the past, the principals had been sort of against the string idea because students play so terribly, you know. They were very impressed with what the kids had done in a year's time. I'm very eager to continue next year.

M. You can see, from the earlier comments we asked for, that there is a structure to this. You have to make assignments, and we have to have evaluation sheets. Mr. Rolland made an effort to put some sort of structure to these Action Studies. We felt that when you got the blue and red and what-not flip chart which showed units, you'd probably follow this in a general way. Maybe you'd be off a unit or two here and there, but, as I saw the reports coming back, I found the teachers were taking Unit 22 and Unit 4 and Unit 19 and skipping here and there. I'd like to know why, or whether you think that a structure isn't possible because your classes are all so different? If we were to try this in a program for every teacher, including the band directors turned string teachers, it would have to be far more structured than it does for you, who can use your own creative genius. So now, what's wrong? Where did we fail in trying to have some sort of system? We couldn't schedule the films from the main office, because we didn't know if you wanted to show film 17 or film 2 next week. Does anybody want to say anything about putting these materials in the final report as a curriculum?

T. I kept asking for some structure. I kept asking the visiting staff member what order I was supposed to follow, because I couldn't figure out what I was supposed to do.

M. Did you use the flip chart?

T. I don't even know what it is.

T. That didn't solve my problem for some reason.

T. No, I don't think it's clear enough, either.

T. It seemed to me to zig zag. I couldn't see that there was an order, either.

M. This is all the order he proposed.

T. It didn't fit the order. It didn't fit anything, that I could see. This is the problem. It seemed to zig zag around and even that didn't follow any sequence.

M. Is there some general consensus on this?

T. I felt the same way. I like to spend one lesson on one thing, not go from Unit 8 to Unit 22. If you just read what's in one of these things, you'll see how much it zig zags.

T. I think, in my case, the manuals might have caused some of my trouble. I found that I'd start reading a manual and instead of reading maybe just one little section, I'd go through and read the whole thing and I'd think, well, why not just continue? If the children are interested in this part of it, why not go to the next part and the next part while they're doing it well? Why start on something and say, well, that's enough of that? Now let's go to something else, and end up doing fifteen things in one lesson.

T. I believe in following something to its logical conclusion, and, rather than have a smattering of many things in one given lesson, or one or two weeks, I'd rather just continue along one line.

M. I think now we're getting down to individual teacher differences. One of Mr. Rolland's ideas was to try the smattering. He siad, "why don't we introduce these things very early and keep coming back to them over and over?" That's what we really want to know. Is this possible?

T. Basically, that's fine.

T. I followed that flip thing religiously. Unit by unit and no matter what came up, we learned it, except when we didn't have the manual or the film. Of course, we were constantly asked what we were doing, but I would like to see a curriculum that's set up that you could cover in a year and that you could do for, say, two years in a row--the same curriculum with different materials. Maybe some things would have to be taken out, for instance, some things that beginners do, such as going into rest position. Maybe that could be deleted from your second year. I think one thing nice about the way it zig zags is that if you could possibly complete it in a year, you could do it again next year, and you have so many things happening that the student is constantly being reinforced--if not reinforced, reintroduced to some of the basic things. Now that assumes they know the technique once you teach it, and that is not always the case. But I enjoyed the zig zag business.

M. Do you want to comment on that?

T. Well, I'm not sure. Maybe it would be a good idea to have a general outline, like this was outlined by pages. It kind of outlined the pages, except there is a page about left hand someplace, and later on down there'd be another one about left hand that you get to later in the manual. Maybe there should be an outline for each thing to go along with this, so that if you wanted to go on to the next step, you could without going back and looking.[1]

M. O.K. Good. All right. May we go on to the next item? I have two more upon which you can comment if you'd like to: the Action Studies--the skills. Right now, they are supposed to accompany the films. The first question is: could we describe the Action Studies so well in a manual that you wouldn't need the films? That doesn't mean the films are not a good thing. But let's assume that lots of string teachers don't like to set up a movie projector. Could they be effective, and, if so, should they be in any order?

T. Well, I think a lot of the value in the films is convincing the teacher, because there are a lot of teachers who do it their own way. As the teacher reads a manual--maybe not quite understanding it--perhaps he is not convinced this is the right way or this is any way at all to do it, but, by seeing the film he can see what a good thing it is. And I think a lot of teachers--if you market this without the movie or without any kind of instruction through classes or whatever--are not going to do it.

T. I think the manuals are not enough. You can't feel the action; you can see it. The same, I suppose, as a manual on tennis. But if you see something played, it helps.

M. Now, who does it help, the teacher or the student? Does it help both?

T. Both.

M. You have to show the films to your students. Is that true?

T. Yes.

M. More than once or twice? We have lots of schools that didn't show them more than once, and so I'd like to know if that was a scheduling problem, or if you didn't really get as much out of them?

T. There were too many things to do. There wasn't time to show all films several times.

M. Well, that's what we need to know. What would be the first thing to go?

(Tape expended at this point.)

Summary

As mentioned in the early paragraphs of this chapter, evaluation of curriculum projects is always difficult, even under ideal circumstances. This Project, using teachers inexperienced in research design, unaccustomed to adhering to formulated objectives, and accustomed to teaching by intuition, had the usual complications. One cannot say that the materials developed in the Project, if used by all teachers, will invariably result in superior string students. Any such claim would immediately be recognized as specious. However, data have been collected which indicate that some of the materials developed will be of value to all teachers and students and perhaps all of the materials will be of value to some teachers. Although the materials were primarily designed for beginning and remedial students, the principles are applicable to string players of any age or level. The teacher, whether or not an expert performer, benefited by the use of the materials. However, the subtleties of some parts of the films and some of the Action Studies are certainly more easily perceived by the string player.

The materials were very successful with string teachers, and evaluation of the films by string teachers has indicated a reception enthusiastic beyond the fondest hopes. There is little doubt that the films are excellent and may have their greatest value in teacher training, a project not investigated. Although the video evaluation did not show significantly better scores for the off-campus Project students than the non-Project control classes, this was not surprising, since the control classes were taught by outstanding and experienced teachers. The ultimate goal of this research--good string playing--is not unique to the Project. However, the Project has systematized movement and rhythm training in string playing, has made it possible to disseminate movement education in a meaningful way, and has suggested several ways of improving the efficiency of teaching important principles.

Project principles worked best when thoroughly understood and diligently applied. The Champaign, Illinois, classes (taught by former students of the Project Director) and the Urbana-Champaign class supervised by the Project Director presently rank among the finest classes in the nation. In the opinion of critics who evaluated the Project, these classes perform better than touring students from abroad. The evidence which supports this statement has been presented at conventions and clinics throughout the country, as well as having been filmed. The argument may be presented that the students who show such promise are specially selected. In a sense this is true, but that is the nature of string instruction: students who desire instrumental work elect it either in the public schools or through private instruction.

The Project materials "turned teachers on." There were no control classes in the conventional sense, because the cooperating teachers, once exposed to the basic and natural Project principles, found it impossible to teach their former methods. Students improved markedly when they were exposed to the Project materials.

The contribution of the Project was most significant in its exposition of basic principles of movement. This exposition was accomplished in many ways: through manuals and films, indirectly through related musical materials, and through personal contact. The most succint and clear presentation occurs through the combined film-manual approach. Although its singular effectiveness was not tested, evidence can be presented that it is a successful contribution of the Project.

Teacher education programs are not standardized nor are string teaching methods. Thus, materials are used differently and they differ in their effectiveness. All of the Project materials were effective in certain situations and served to meet real needs of string educators. The Project has taken a forceful step forward in providing pedagogical materials usable by string teachers. Hopefully, this is only the first step in providing needed materials for a variety of string teachers, students, and teaching situations.

FOOTNOTES

[1] This syllabus, Suggested Curriculum Guide, was revised and expanded in 1970. (See Appendix D.)

CHAPTER TWELVE

CLINIC EVALUATIONS

The Project Director, who was active as lecturer and clinician prior to the inception of the Project, continued his activities in this area. In many of these events, in addition to his lectures and violin performance, he presented films and demonstrated other materials developed under the Project. Thus, the achievements and products of the Project were not cloaked in secrecy but were freely circulated among string teachers. The discussions and comments which usually followed these demonstrations helped to provide evaluative data. Early comments were considered in shaping and developing the later materials. The dates and locations of these events are listed below.

1966	
Dec. 2-3	New York Music Educators Association, Buffalo, New York
1967	
Jan. 20-21	Interlochen Arts Academy, Interlochen, Michigan
March 10	Nebraska ASTA, Lincoln, Nebraska
March 11	MENC Regional Convention, Colorado Springs, Colorado
April 2-4	Greater Spokane Music Festival, Spokane, Washington
April 14	MENC Regional Convention, Detroit, Michigan
April 19-20	MTNA-ASTA National Convention, St. Louis, Missouri
June 13-23	Drake University Summer Workshop, Des Moines, Iowa
July 3-8	Ithaca College Workshop, Ithaca, New York
Aug. 14-18	NSOA Summer Workshop, Elon College, Elon College, North Carolina
Aug. 21-22	Meadowmount School of Music, Elizabethtown, New York
1968	
Feb. 7	University of Texas Workshop, Austin, Texas
Feb. 8-9	Texas Music Educators Association Convention, San Antonio, Texas
March 15-16	MENC National Convention, Seattle, Washington
April 26-27	Gustavus Adolphus College College Workshop, St. Peter, Minnesota
June 11-13	Northern Wisconsin State University Workshop, Stevens Point, Wisconsin
June 25-July 3	Northwestern University Workshop, Evanston, Illinois
July 29-30	Eastman School of Music Workshop, Rochester, New York
July 31	Tanglewood, Lenox, Massachusetts
Sept. 21-22	Three-City Workshop and Festival, Lima, Ohio
Oct. 29	Contemporary Music Workshop, University of Illinois, Chicago Circle Campus, Chicago, Illinois
1969	
Jan. 9-10	North York Public Schools Workshop, Toronto, Ontario
March 12-13	MTNA-ASTA National Convention, Cincinnati, Ohio

April 18	MENC-ASTA National Convention, Mobile, Ala.
April 24-26	Texas ASTA and Del Mar College Workshop, Corpus Christi, Texas
April 30-May 1	Texas Music Educators Association Convention, Dallas, Texas
June 11-12	University of New Mexico Workshop, Albuquerque, New Mexico
June 24-25	University of North Carolina Workshop, Greensboro, North Carolina
July 16-19	ASTA Regional Conference, Indiana University, Bloomington Indiana
Aug. 1-2	Texas TODA Convention, San Antonio, Texas
Aug. 6-7	NSOA National Convention, Holland, Michigan
Oct. 30-Nov. 1	Tucson Public Schools Workshop, Tucson, Arizona
Nov. 2	Illinois MTNA-ASTA, Edwardsville, Illinois
Nov. 14	New College Workshop, Sarasota, Florida

1970

Jan. 16	Indianapolis Public Schools Workshop, Indianapolis, Indiana
Jan. 17	Midwestern Conference on School Music, University of Michigan, Ann Arbor, Michigan
March 8	MENC National Convention, Chicago, Illinois
March 14	Western Kentucky State University Workshop, Bowling Green, Ohio
April 1-3	Flagstaff, Phoenix, and Tucson Public Schools Workshop, Arizona
April 11	Central Michigan University Workshop, Mount Pleasant, Michigan
June 9-11	Kansas State University Workshop, Manhattan, Kansas
June 15-19	Memphis State University Workshop, Memphis, Tenn.
June 29-July 3	Sarasota Public Schools and University of South Florida Workshop, Sarasota, Fla.
July 6-8	University of Missouri Workshop, Kansas City, Mo.
July 16-17	ASTA Regional Conference, Urbana, Ill.
Aug. 21-23	New York State Music Educators Convention, New York State University, Fredonia, N. Y.
Sept. 30	Peoria Public Schools Workshop, Peoria, Ill.
Nov. 2	Kentucky MTNA Convention, Murray State College, Murray, Kentucky
Nov. 14	Indiana Music Educators Association Convention, Indianapolis, Indiana
Nov. 21	Indiana Music Teachers Association, Evansville, Ind.

1971

Jan. 16	Midwestern Conference on School Music, University of Michigan, Ann Arbor, Mich.
Jan. 22-23	Annual Conference of Music Education, University of Oregon, Eugene, Oregon

Feb. 19-20	Central Missouri State College Workshop, Warrensburg, Missouri
Feb. 27	MENC Regional Convention, Atlantic City, New Jersey
March 12	MENC Regional Convention, Cincinnati, Ohio
March 13-14	Charleston Public Schools Workshop, Charleston, South Carolina
April 4-5	MENC Regional Convention, San Diego, California

In a number of these workshops, formal and informal comments were solicited, some of which are presented below.

Victor Aitay, Concertmaster, Chicago Symphony (Comment after July, 1969 evaluation of eleven Project control classes from the Chicago area and Champaign-Urbana)

> This is a great project and the results were amazing. The children really played excellently. The relaxation was obvious and definitely improved their position and playing. I recommended to several of my students that they take up the Project and the results were enormous.

Morris Collier, Professor of Violin, Nebraska Wesleyan University

> The films are wonderful! They show an imaginative and creative approach that really gets to the root of a problem and show vividly the problem's solution. It was wonderful to see the progress made by the students after the remedial training. I have been using many of the ideas and they work very well. It is so good to see a "mousy" style of bowing loosen up and look free and easy.

Betty Crossley, String Instructor, Western Illinois State University

> I liked the truthfulness and the humor shown in the films of the beginning class of students. This was no put-on act but showed all the problems inherent in such a group and how to solve them. It would be invaluable in training student teachers in strings. A method was shown but it was not an inflexible one and would stimulate student teachers to be creative in their teaching. I was most impressed with the quality of the films. The teachers manuals were informative and clear.

Paul Doktor, Concert Violist, New York

> I was deeply impressed with the work that must have gone into the film preparations, all the thought spent on it, and the fortune to have it all come out so extremely well and convincing! Congratulations!

Robert Evans, Assistant Coordinator of Music, North York Public Schools, Toronto, Ontario

Yours was one of the most stimulating clinics, workshops, or in-service sessions that we've had. I've been into two or three schools since and have found the teachers warming up the strings with the circular follow-through, talking about relaxing the tension, etc. For my own part, I couldn't be more happy in the choice. I found your research thorough, scholarly, and realistic, and the series immediately applicable in my own work.

Mrs. Pearl Funk, Private Teacher, Bloomington, Illinois

> It is my opinion that the project films are of great value both to the teacher and the student as they clearly show the proper position of both the right and left hands. The demonstration of the use of various teaching techniques is helpful. I am particularly impressed with the many exercises developed to shape the left hand and with the bowing exercises.

Professor Josef Gingold, Professor of Violin, Indiana University

> The entire project is of great value to string teaching. Professor Rolland's approach is based on superior knowledge and a lifetime of experience. I congratulate the Illinois String Research Project for making these films available to schools as well as private teachers. They serve a much needed purpose.

Elizabeth Green, Professor of Music Education, University of Michigan

> This project is worth all the time, work, and expense put into it. It is especially valuable today in orienting modern techniques to the school-age child--third, fourth, fifth grade.

Doris Hansen, Private Teacher, New Orleans, Louisiana

> I feel that this is an extremely valuable series, very well organized and clearly presented. I should think all teachers of children and teenagers would benefit by being well acquainted with all of this material.

Arthur D. Hill, Jr., Orchestra Director, Ball State University

> Thank you very much for your stimulating and exciting presentation at the Indiana Music Educators Conference. I heard nothing but glowing reports on your film presentation and the young students who performed. The people in this state who are working with strings are very excited about the results of your string teaching and approach to playing.

Roger E. Jacobi, Professor of Music Education, University of Michigan (Comment after Project demonstration at Midwestern Conference, University of Michigan, January 1970)

> I have seldom heard such complimentary remarks as were written during the conference evaluation about your film demonstration and the performance of the youngsters you brought along.

Patricia Kagan, Student, University of New Mexico

> I enjoyed the seminar and found Mr. Rolland's explanations to be very helpful. The close-ups and slow motion photography showed effectively what Mr. Rolland demonstrated and explained during the seminars. Particularly effective was the film showing the relative thumb placement and finger elevation for people with different sizes of hands. This could be an important teaching aid.

Harry Lantz, President, American String Teachers Association, Professor of Music, University of Wisconsin, Kenosha (Comment after demonstration of Project materials and performance of the Champaign-Urbana control class at the 1970 MENC Convention, Chicago)

> Your presentation of the University of Illinois String Research Project in Chicago was absolutely marvelous. All of your youngsters performed very beautifully and made quite a hit with the audience. I hope that the results of your Project will be available for all to benefit from.

Mr. Albert Lazan, Professor of Violin, Indiana University

> The films viewed, together with Professor Rolland's comments, were first rate and some of the best pictures I've seen.

L. Leeland, Instrumental Music Teacher, Pasadena, California Public Schools

> These films are excellent and should be seen by every instrumental music teacher.

Professor Newell H. Long, Professor of Music Education, Indiana University

> The films on violin playing impressed me very favorably both as to content and technical excellence. I will be delighted when they are available to show the students in my instrumental methods classes.
>
> The films are compact, but not too compact, and are free from excess footage found in so many educational films. The photography zooms in nicely on the instructional problems and the narration is equally lucid and pertinent.

Congratulations on developing these successful, much-needed tools to aid the teaching of strings and the teaching of teachers of strings.

Abigail McVeety, String Instructor, Albuquerque, New Mexico

This workshop has been most exciting! It has covered the training of the young student in a clear and thorough and fascinating way. Fundamentals that are essential are more clear to me than they have ever been through years of study of the violin. I know I shall be a more capable teacher as a result of this course. It is the best presentation I have ever seen, and I certainly hope it will receive all the help it deserves to get it to the teachers throughout the country. Our schools will surely be getting a great lift in the string program.

George Perlman, Violin teacher and composer-arranger, Chicago, Illinois (Comment after July, 1969 evaluation of eleven Project control classes from the Chicago area and Champaign-Urbana)

I believe Rolland is doing something of a revolutionary nature. His students are far ahead of any other first or second year students in the freedom of their bowing and in their intonation. Their emotional response to the music is unequalled. All you have to do is look at their faces to know they are enjoying themselves. Paul Rolland's methods are the first specifically American contribution to the business of violin pedagogy. They are the coming thing; I am convinced of it.

William Primrose, Professor of Viola, Indiana University

My wife and I attended a meeting of the Indiana ASTA branch a couple of days ago in Indianapolis where we saw a showing of what I believe to be your most recent film and we were deeply impressed. The filming and production are far away ahead of anything we have seen along similar lines. We send you our warmest and most sincere congratulations.

Mr. Robert Ralston, Coordinator of Instrumental Music, Elkhart Community Schools, Elkhart, Indiana

Most outstanding, I felt, was the film shot during the summer music camp showing the diagnosis and remedial work done on a small number of players. The improvement during the camp period was dramatically demonstrated by the time lapse photography.

This film was uncomplicated and the "stars" were the same kind of raw materials we all work with each day. The lessons learned were clear and valuable.

Ann Robert, String Instructor, Peoria, Illinois Public Schools, Teacher of Project control classes

At the end of one year of teaching the Project, I find that my Project students differ from my former students in the following ways:

1. Intonation is better.
2. Technic is more advanced.
3. Playing is somewhat more relaxed.
4. Bowing is generally better.
5. Rhythmic sense is developing more quickly.
6. Hand positions are as good or better with less work on the part of the teacher.

Marylyn Sexton, String Instructor, Lombard, Illinois Public Schools, Teacher of Project control classes

There is a marked difference in terms of playing posture and freedom from excessive tension between by Project classes and those of my previous three years of teaching. The excellent progress of my present students has shown me what is possible when the emphasis is placed on mobility and when undue tensions are minimized from the start. Mr. Rolland has the remarkable ability to analyze a technique into its component parts and to make the step by step reassemblage possible for the young student. It is largely for this reason that my students of one year are able to use whole bows, play harmonics, recognize and play octaves, bounce the bow, build major and minor triads, start with clean attacks, and produce resonant releases. Furthermore, they know what it feels like to shift to fifth position and beyond: some demonstrate embryonic vibratos. What's more, their smiling faces show they like what they are doing. These are the things that make for good string playing, and the Illinois String Research Project is making the teaching of these things a rewarding experience.

Mr. Jerald B. Slavich, String Instructor, Champaign, Illinois Public Schools

The films present the structural aspects of artistic violin playing in a clear-cut and simple design. The children learn by observing and listening to other children play. Repeated showings followed by class trial inculcate practice concepts which are carried home into the child's practice room and are remembered. So much more can be done with less time, a valuable consideration in public school instruction.

John Smith, Student, University of New Mexico

> Particularly helpful was the way that Mr. Rolland took apart problems. This was done in such a way that cellists can use the same method in teaching and playing.

Mrs. Harley O. Spencer, String Instructor, South Bend, Indiana Public Schools

> I was intrigued by your fresh and imaginative approach to teaching beginning strings. I am sure children find your "rote-note" combination much more fun than the usual "Mary Had a Little Lamb" approach. I especially like your theory of instilling the feeling of freedom and ease in handling the instrument, thus avoiding the tension and stiffness found in so many beginners . . . The music literature you have incorporated is delightful--so very imaginative and appealing and so superior to so much of the dreary fare offered in so many beginning courses.

Mrs. Hugh Spencer, Pricate Teacher, Villanova, Pennsylvania

> Mr. Rolland's materials fill a great gap in the dedicated teacher'smaterial for beginning students.
>
> I enjoyed the films tremendously both as to technical production and musical content.
>
> I was intrigued with the children and wanted to see more! They seemed unaware of the cameras and completely involved with the job at hand. I was amazed and excited at the speedy results of Mr. Rolland's remedial techniques.

Sister Marcella Steffes, String Instructor, LaCrosse, Wisconsin

> Of all the films I have seen on string teaching, I would rate yours as the most effective, not only because of clear photography, etc., but also because of your whole approach to string teaching. It's tremendous. Congratulations!

Jack Stephenson, Professor of Music, University of New Mexico

> The response of the people attending your clinic was excellent. Some comments: "The string practice teachers must see all of these films before being assigned to us for student teaching."

Professor Samuel Thaviu, Professor of Violin, Northwestern University

> I have looked at the materials used by the Project and find it of great interest and the right ladder to good violin playing. I feel sure that the Project will furnish us with many fine string players in the near future.

> The Project materials are all based on fine violin-playing logic. I agree wholly with the general format. Mr. Rolland has used his excellent playing experience and ability to make the project a very practical one to give the student the correct foundation.

John V. Tellaisha, Director, Educational Division, Scherl & Roth, Inc.
(Comment after demonstration of Project materials and performance of the Champaign-Urbana control class at the 1970 MENC Convention, Chicago)

> So far as I'm concerned, your effort is one of the most enlightening and important projects we've had in the entire school of education as far as the strings are concerned. We will be delighted to see all this available to teachers in our music community in the near future.

Roman Totenberg, Professor of Violin, Boston University

> The films are very helpful in clarifying the basic motions in violin playing. They are clear and concise so that even advanced players found them interesting and profitable.
>
> I have read the manuals and found them very thorough and helpful for teachers of early stages in violin playing.

Paul C. Wolfe, Professor of Violin, New College, Sarasota, Florida

> As an independent study project, a violin student has undertaken to begin teaching another young lady who has had no experience whatsoever with the violin. With the aid of the wall charts I believe she has accomplished at least 6 months of development in 3 weeks.

The following questionnaire was completed by many of the teachers attending the demonstrations.

UNIVERSITY OF ILLINOIS RESEARCH PROJECT FILMS
"The Teaching of Action in String Playing"

1. The following films were viewed by me: ______________________________
(list by code number)

2. Of these, the following were helpful to me as a teacher: ____________
____
(list by code number)

3. Particularly helpful were: ______________________________

4. Did not benefit from viewing: ______________________________

5. Rank in order of value ("1" is high, "5" is low). Viewing these films would be beneficial to students of: 3-5th grade ____ 5-8th grade ____ high school to college ____ students of any age ____ teacher ____

6. Rank in order of value ("1" is high, "5" is low).
   a. The pedagogy introduced ____
   b. The use of children as subjects ____
   c. The use of artists and teachers as subjects ____
   d. The photography and color ____
   e. The use of narration rather than direct presentation ____

7. The materials presented on the films are:
   a. Easy to understand ____
   b. Require preparation or much concentration ____
   c. Difficult to understand ____

8. List shortcomings, defects of the films (disregard synchronization and sound problems caused by poorly adjusted projectors).

9. When available, I would recommend to my school system the purchase of the following films:
   ____
   (list by code)

10. The best films lengths are: 3-5 minutes ____ 6-9 minutes ____ 10-15 minutes ____ 16-25 minutes ____
    Other comments:

Name________ Instrument________ Teaching Position________ Address________

TABLE 13

RESULTS OF FILM EVALUATION QUESTIONNAIRE FROM TEACHERS MEETINGS AND WORKSHOPS

FILM TITLE	Number of Viewers:	Helpful to Teachers:	Particularly Helpful:	Did Not Benefit From:	Recommended for Purchase:
Young Violinists in Action (F-R)	47	24	10	1	43
Principles of Movement in String Playing (P-M)	44	34	19	1	44
Rhythm Training (R-T)	51	34	19	6	43
Establishing the Violin Hold (L-1)	64	52	30	1	51
Holding the Violin Bow (R-1)	58	42	21	1	53
Violin Playing at the Middle of the Bow (R-2)	35	24	6	0	33
Principles of Left Hand Finger Action (P-L)	42	28	10	0	40
Establishing Left Hand Finger Placement (L-2)	92	70	28	2	63
Bouncing the Bow (R-3)	98	76	44	0	52
Extending the Bow Stroke (R-4)	70	52	24	4	43
Developing Finger Movement (L-3)	43	28	10	1	38
Basic Shifting Movements (L-4)	70	47	31	0	53
Martelé--Staccato (R-5)	73	57	21	1	43
Developing Flexibility (R-6)	82	63	38	0	55
First Steps in Vibrato Teaching (L-5)	93	83	74	1	76
Sustained Strokes--Détaché Bowing (R-7)	41	22	9	0	36
Remedial Teaching (R)	64	49	30	2	48

FILM EVALUATION--Cont'd

Viewing these films would be beneficial to students of:
- a) 3-5th grade--57
- b) 5-8th grade--85
- c) High School to College--69
- d) Students of any age--108
- e) Teacher--126

The materials presented on the films are:
- a) Easy to understand--138
- b) Require preparation or much concentration--16
- c) Are difficult to understand--2

The best film lengths are:
- a) 3-5 minutes--11
- b) 6-9 minutes--71
- c) 10-15 minutes--70
- d) 16-25 minutes--6

CHAPTER THIRTEEN

REPORT ON THE EFFECT OF RECORDS IN STRING INSTRUCTION

Terre Haute Evaluation

In the spring of 1969 a center was established in Terre Haute, Indiana to investigate possible uses of a recorded music for strings with grade school students. Specific problems investigated were:

1. The value of the record in improving intonation.
2. The value of the record in preparing specific numbers for performance.
3. The value of the record in forming concepts of string tone.
4. The value of the record in forming concepts of phrasing, nuances, expression, and other factors which contribute to musical understanding.

Original Research Plan

The Project Director and Associate Research Director submitted the following proposal to Arthur Hill, Jr., Coordinator of Music, and Jerome Fougerousse, Chairman of String Instruction, Vigo County School Corporation, Terre Haute.

1. The research will be the responsibility of the Terre Haute teaching staff and the investigators from the University of Illinois.
2. In general, the teaching will be done in mixed string classes of first-year (fifth grade) and second-year (sixth grade) students. In schools where like instruments are taught (for example, only violins) an effort should be made to match experimental and control groups on this variable.
3. Experimental and control groups should be matched as nearly as possible on whether or not the teachers are string majors, on the socio-economic level of the community, on the general interest in string instruction in the school, on quality of teacher, on type of instrument (i.e. an approximately equal number of violins, violas, cellos, and basses in both groups), on the availability of phonographs for home practice, and on other variables considered important in the local community.
4. The participating teachers and schools will arrange for the teaching of not less than two matched classes, one of which is a control group.
5. A workable phonograph will be present in each classroom of the research group during each class period. The control classes will not use the records. An effort should be made to insure that the children who have the records do not lend or play them to members of the control group.

The following procedures are suggested:

1. At the beginning of the evaluation, each teacher will rate each student in a simple manner: talented-diligent, talented-lazy, average-average, untalented-diligent, untalented-lazy. The teacher will forward this to the Project office and will not keep a record of this rating. At the end of the trial a similar requirement will be imposed.
2. During homeroom period each student in the sixth grade will fill out an attitude survey ranking his subjects from favorite to least favorite. This will be accomplished twice: at the beginning of the evaluation and at the close. These survey questionnaires will be computed by local facilities, the results being forwarded to the String Project Office.
3. The county school staff will video tape classes selected at random from the experimental and control groups a minimum of three times during the project. These tapes will be made by outside personnel.
4. Some form of practice record may be required of students for short periods of time spaced throughout the project.
5. An arrangement will be made whereby all the experimental students and all the control students may be brought together at the end of the study to perform, for an impartial jury, pieces from the record as well as numbers from their method books.
6. Short written assignments may be given periodically to the students. These will never require more than five minutes of the student's time.
7. A short questionnaire will be mailed to the parents of all students to solicit their opinions of the string program in Vigo County and suggestions for improvement. This questionnaire will be constructed jointly by the teaching staff and the String Project staff.
8. On-the-spot evaluations may be made, announced or unannounced, throughout the project by Mr. Hill, Mr. Rolland, Dr. Colwell, or other designated personnel, subject to the approval of Mr. Hill.
9. A playing examination will be given to each student sometime in May. The examination will be constructed jointly by the teachers and Project personnel but administered by the teacher.
10. The project as a whole will deal with the use and effect of recordings in class teaching of string instruments. It will not be geared to the use or testing of visual materials developed by the Urbana or Terre Haute research centers, and care should be taken to avoid cross references between the audio and visual elements of the two projects.

Modified and Accepted Research Plan

The Terre Haute staff agreed to the following:

1. We will confine the use of the Illinois String Project materials to the sixth grade (approximately 225 students) during a three month trial.
2. The String Project will not add to the elementary teachers' loads by asking them to fill out numerous reports. Most reports should be prepared by Mr. Fougerousse or Mr. Hill, Jr., these reports being kept to a minimum.

3. Since we have no classes of like instruments at the sixth grade level, all classes will be mixed.
4. Each student in the sixth grade will receive a very short attitude survey. The duration of this survey should not be longer than ten minutes. The music teacher could place her two-word evaluation on the bottom of this attitude survey, which will be given during the regular thirty-minute class period for string instruction.
5. The selected Fletcher tunes will be used during ten to fifteen minutes of each lesson period as supplementary material to the Applebaum text presently in use.
6. The Music Office of the Vigo County Schools will video tape both control and experimental classes and will plan a festival performance with the inclusion of some of the Fletcher tunes.
7. Completion of the suggested short written assignments throughout the project and a performance by the students for an impartial jury are not practical in our situation.
8. We will provide names and addresses of sixth-grade string students so that the University of Illinois can mail questionnaires to students and/or parents. However, we ask that only two questionnaires be mailed.
9. Visitation of control and experimental classes by University of Illinois personnel will be arranged through the music office (V. C. S. C.). The principal and music teacher will be informed prior to every visit.
10. We would like to have approximately ninety recordings (seventy-five for students and fifteen for the teachers) of the following: tuning band A and Fletcher tunes, numbers 2, 4, 5, 6, 7, 8, 9, 10, 13, 15, 17, 19, 27, and 33. We will select about seven or eight of these pieces for the Elementary Music Fextival on April 20, 1969. We realize that each recording has thirty-eight tunes, but we feel that the fifteen numbers selected will be a maximum amount of material for the teachers to cover in our class teaching situation.
11. We agree to duplicate string bass parts of the fifteen selections.

Research Proceedings

In spite of the cooperation of the Terre Haute staff, several problems arose. Ideal matching of all classes was not possible (see comments of teachers below). Some of the teachers of the research groups reported that their students used the record very little at home, and many commented that the record was too fast. A few teachers played the record in both their research and control classes. There were delays in starting the testing program, which began on January 15, 1969 and concluded with the elementary festival on April 20, 1969. The brief course of the testing program should be considered when evaluating the data gathered.

Five classes (two with recordings) were video-taped in four different schools. The size of the classes varied from three to fourteen. The pretest indicated that the classes were equal; the posttest was not possible because the video tape machine was stolen.

However, a second part of the study was possible. The teachers completed a questionnaire which is shown in Appendix C, Form 7. At the end of the three-month trial, the teachers were asked to compare their research and control classes in regard to musical style (rhythm, intonation), speed of learning, and motivation. Their comments are presented below.

Teacher with three classes (one group used music and records in class and at home, the other two used music only)

Teacher No. 1
Effect on Speed of Learning: The class which used the record at home played it sometimes but not regularly. They learned the music faster than the other two classes. However, the make-up of the class was such that I think they would have done better than the other two classes even without the record.
Effect on Musical Style: Rhythm and intonation was better in the class with the record.

Teacher with two classes (one group used music and records in class and at home, the other used music only)

Teacher No. 2
Effect on Speed of Learning: No great difference in learning speed between the two groups.

Teacher No. 3
Effect on Musical Style: The record helps in teaching steady tempo, expression, and musicianship in general.
Effect on Speed of Learning: The children with the record learned faster. The record is very worthwhile as a learning tool.
Effect on Motivation: Favorable. The record is a help in home practice. The student remembers what was done at the lesson.

Teacher No. 4
Effect on Musical Style: Record really helped with phrasing, style, and musical quality.

Teacher No. 5
Effect on Musical Style: The record was helpful and affected the style.
Effect on Speed of Learning: The record did speed the learning process.

Teacher No. 6
Effect on Musical Style: The students with the records improved in sense of tempo, rhythm, and style. The music as a whole was more easily conceived.
Effect on Speed of Learning: There is little doubt that the class which used the recordings did much better insofar as learning the music faster is concerned.

Teacher No. 7

Effect on Speed of Learning: Speed in learning was about the same in both classes, but the children with records used them very little due to frustrations of trying to keep up with the tempo, record skips, and complications at home.

Effect on Motivation: Those with the record were delighted at first but discouraged when they tried to play with it because they couldn't keep up. The students with records liked the music better than those without.

Teacher No. 8

Effect on Musical Style: Musical quality was much better in the class with the records, which did better in all respects.

Effect on Speed of Learning: Not much faster in the class with records.

Effect on Motivation: The students felt challenged by the record. One pupil played all the tunes the first evening. Motivation was much better and attitude more determined in the class with the records.

Teacher No. 9

Effect on Speed of Learning: Group A (with the records) learned the music faster. However, I am inclined to believe that a great deal of this was due to their superior innate ability as opposed to Group B (without records).

Effect on Motivation: Records seem to motivate the students to keep trying.

Teacher No. 10

Effect on Musical Style: With my classes so different to start with (the class with records was slower), it is difficult to come to any comparisons. However, the musical quality was better in the group with records than it would have been without them.

Effect on Speed of Learning: The speed in learning was faster in the class with records.

Effect on Motivation: Motivation and attitude were greatly improved in the class with records.

Teacher No. 11

Effect on Musical Style: I couldn't see much difference in the two classes in regard to rhythm, intonation, and style. Individual home practicing was the determining factor.

Effect on Speed of Learning: The class with records learned the music more quickly, probably because they learned the tunes at home with the record. They probably practiced more often.

Effect on Motivation: I believe the class with records had a better attitude and were more interested in learning the music because of the record at home.

Teachers with one class (the group used music and records in class and at home)

Teacher No. 12
Effect on Musical Style: My judgment is that the record really did help to develop more musical thinking in the minds of the students and to present several different types of playing.
Effect on Motivation: The record helped to create interest.

Teacher No. 13
Effect on Musical Style: The record helped in developing style.

Teacher with one class (the group used records only in class)

Teacher No. 14
Effect on Motivation: I could see that the record was an inspiration to the children.

In the third part of the study, each student involved completed a survey which is shown in Appendix C, Form 8. Although many of the teachers believed that the use of the recordings had a positive effect on attitude and motivation, the student questionnaire did not document this belief. The results indicated that there was no appreciable difference in attitude between the research and control groups. The rating scale was 1 to 5 with a high of 1. On the question of whether or not the student liked music class, mean scores were: research group--1.35; control group--1.48. The mean score of the research group was 2.21, control group--2.22 on the question which determined whether or not the student liked to practice. When asked to name the instrument they would prefer to learn, the students did not favor the violin over other band and orchestra instruments. Approximately seven per cent of the students studying strings indicated that they would continue to study a string instrument even if they were free to choose another instrument.

The research and control classes performed at the Vigo County School Corporation Elementary Music Festival on April 20, 1969. The Fletcher-Rolland pieces studied by the children were conducted by the Project Director and accompanied by Mr. Fletcher. The Project Director reported that the huge string orchestra performed creditably. The intonation of the orchestra was surprisingly good, and there were no rhythmic problems. The main weakness of the group was the lack of good motion techniques and freedom of movement. Considering the fact that practically all of the teachers of this group were vocal instructors, the results were surprisingly good. Credit for this work is due to Jerome Fougerousse, the only string expert in the system. Mr. Fougerousse instructs his large staff of vocal teachers with enthusiasm and expertise during weekly workshops.

Dallas Evaluation

A second effort to evaluate the effect of recordings in string instruction was attempted in two of the Dallas Public Schools. Miss Ruth Lasley, String Instructor, taught a research class of fifteen students in the Martha Turner Reilly Elementary School and a control class of equal size in the Victor H. Hexter School. The groups were carefully matched on several variables: year of advancement, IQ, string instrument, and grade level (third through sixth).

The testing program began on March 22, 1969. A group of three judges (experienced string teachers) evaluated and tape recorded the individual performances (of non-Project music) of students involved in the study. The evaluation form is shown in Appendix C, Form 9.

The classes then began their study of recorded pieces selected from the first Project tune record and the Fletcher-Rolland record. In mid-May the three judges, using the same form, appraised the progress of each student (control group--May 23, 1969; research group--May 28, 1969). Their pretest and posttest comments on tone quality, intonation, and rhythm are presented in Appendix C, Form 10. A sample of this data is presented below.

Control Group. Students did not hear the records at any time. However, they had the opportunity to play with and hear older, more advanced students in the school. / designates the next evaluator.

No.	Yr. Adv.	IQ	Instr.	Tone Quality
1	1st	117	Vln.	Pretest: Tone scratchy at times / Tension causes tight, small tone. Very little freedom / Tone is small. Needs to use more bow. Scratchy at frog. Posttest: Too much bow pressure / Uses only 6 to 8 inches of bow / Uses too short a bow stroke, but is improving over the first audition.

Research Group. Records were used in the classroom and at home.

No.	Yr. Adv.	IQ	Instr.	Use of Records	Tone Quality
1	1st	121	Vln.	Occasional	Pretest: Fair / Hampered by crooked bow / Good. Posttest: Tone affected by stiff bow arm / Free sound coming.

Students in the research group and their parents were asked to complete a questionnaire concerning the home use of the recordings.

Of particular interest to the Project staff were the parents' opinions of the value of the recordings in increasing interest in and enjoyment of practicing. All but one of the twelve parents who replied commented favorably. The twelve comments are presented below.

Research Number Assigned to Student	Comment of Parent
1	The record makes practice easier on the parents. My daughter enjoys music and doesn't mind practicing.
2	I believe the records helped my son.
4	The records are very much worthwhile. They add interest and build timing skills.
5	The records increase interest and help in practice. My daughter has a "tone deaf" mother who doesn't know if she is playing right or not.
6	My child enjoyed the records very much. I liked them because I know nothing about violin. (I'm learning.)
7	We did not have a record player at first, but my son is improving now that he can use the records.
8	My son enjoys playing with the record and listening to it, also.
10	The records do increase interest and enjoyment.
11	The records have helped my child play the tunes better.
13	My son practiced more diligently before bringing home the records. Although he enjoyed the records, something about them seemed to overwhelm him in that he was not eager to listen to or play with them.
14	The records are a great help and keep a child who is becoming disinterested, more interested.
16	I believe the record system is most desirable and valuable.

Miss Lasley submitted the following report.

The most important factor to be considered is the short period of time devoted to the testing. Two months at the end of the school year does not provide sufficient time for true evaluation. The performance of the students in both groups at the end of the two months lacked the time for preparation which had been given to the performance at the beginning of the testing period. The consequent insecurity was a contributing cause to the lack of improvement in both groups.

I believe the records should have a slow, as well as a fast, version of the tunes, particularly if the students are to play with the record. However, I do not see much--if any--value in playing with the record since the student is inclined to give his attention to hearing the recorded sound, rather than listening to the sound he is making. I do think it is most valuable to have a fine recording to hear and enjoy and to assist the student in improving his own performance.

Control Group

Improvement noted in:
Flexibility--Slight improvement--7
Tone Quality--Considerable improvement--3
No noticeable change--4
Intonation--Improved intonation--4
Interest in home practice--About the same as in the previous period. Four students demonstrated possible slight increase in home practice.

Research Group

Improvement noted in:
Flexibility--Some improvement--9
Tone Quality--No noticeable change--3
One student who played with the record frequently showed less flexibility than before.
Intonation--Improved intonation--2
Interest in home practice--Seven students and parents reported improved interest in home practice. These students made greater use of the recording than the others. One student seemed overwhelmed by the speed of the record. The parent of one student would not permit playing of the record or practice when she was in the house.

Burbank, California Evaluation

A third center was established in Burbank, California on January 15, 1969. The Project tune records were used in a research group of eleven students. Six students studied the same materials without the records. A research group of ten and a control group of six tested the Fletcher pieces. The teacher, Martha Wendt, obviously was interested in using the record and thus assigned the larger number of students to the research groups. The study was completed on May 29, 1969.

Mrs. Wendt's profiles of the twenty-one students in the research groups indicated the following:

Record improved playing and/or motivation: 15
Record improved interest but had no apparent effect on playing: 1
No noticeable improvement in playing or motivation: 2
Student did not use the record at home: 1
No comment by instructor on effect of record: 2

The profiles are summarized below.

Tune Record

Student Number 1 Grade 5 IQ 109

B--- memorized many of the tunes playing both first and second parts. The record was a tremendous help for her. Having the record to listen to at home was an important factor in B--- keeping up her interest in violin.

Student Number 2 Grade 5 IQ 105

S--- is a musical and sincere student and comes from a very poor family. Not being able to afford the rental, they returned the instrument quite some time ago. She occasionally borrowed a violin from a student in another class to use at school. After her instrument was returned, the only preparation that S--- was able to do at home was to listen to the record. This fall she will transfer to one of the larger instruments which will be available to her when she enters Intermediate School. Had it not been for the record S--- would most likely have dropped violin completely.

Student Number 3 Grade 5 IQ 91

The record did not make much of an impact on Y---. She did not apply herself, therefore, did not accomplish much. There had been some illness in the home and other factors which had some effect. She and her older sister who plays viola had both been absent from school a good deal.

Student Number 4 Grade 5 IQ 112

P--- was about to drop violin when I distributed the records to the class. The record and music gained his attention so much and made the class so interesting that he stayed with violin although he did not practice. He was in so many activities that his outside time was taken up with everything but the violin. However, he will continue to play violin when he attends Intermediate School next year where classes meet daily. The record saved a potentially fine player from giving up the violin.

Student Number 5 Grade 4 IQ 114

J--- is a very diligent student and has developed a nice style of playing. She listened to the records faithfully and her playing improved considerably. The bowing variations helped to loosen her wrist. She was reluctant to part with the record and she would like to purchase one when they become available.

Student Number 6

R--- had been resisting the violin most of the year. He did not want to sign up in the fall but I persuaded him to do it. He returned his record about a month ago because he "wasn't using it anyway." In spite of his apparent disinterest he continued to attend class and participate actively.

Student Number 7 Grade 4 IQ 101

J--- was the weakest student in the class. She had taken private lessons before she entered my class but evidently had been poorly taught judging by her problems in position and bowing. She had a difficult time keeping up with the class.

School Number 8 Grade 4 IQ 97

H--- is a likeable, mischievous child with a magnetic personality. She inherited a full-size violin from an older sister and had some problems coping with the size of the instrument. She had never shown too much enthusiasm for the violin, but when we began with the record in class her interest perked up. She began to practice for awhile and then the novelty wore off. However, in the past few weeks her interest revived itself, principally, I believe because she was a good friend of J--- who was always enthusiastic about the violin. She began to enjoy the tunes on the record and was drawn into the spirit of the class. Her playing improved and she was proud of the fact that she had memorized several of the pieces and could play both parts.

Student Number 9 Grade 4 IQ 135

S---'s mother wrote the following on a questionnaire: "The day our daughter brought home the record and started playing along with it, there was renewed interest shown by the whole family. S--- really enjoyed practicing with it and we saw her take more time and work harder with her violin. We are very grateful for it."

This testimonial describes what happened not only in S---'s case but for many of the children.

S--- is a very bright a musical child, but has personality problems. She has a very poor disposition and does not get along well with the other children. She talks incessantly, is argumentative, and generally provokes trouble in trying to dominate the other children. The last semester was the most pleasant I have had with S--- as her conduct has improved a great deal over what it was before. She plays very musically and memorized the entire book, learning both parts. This child's life has taken on a new meaning since she started violin. Being naturally very musical, this was the outlet she needed to gain confidence and poise, both of which were lacking previous to her beginning the violin.

Student Number 10 Grade 4 IQ 82

J---'s IQ score proves to me the unreliability of test scores. I will be curious to see what his score will be when he is tested again in the sixth grade. This boy is so alert, so musical and is a natural for violin playing.

Student Number 11 Grade 4 IQ 103

D---'s attitude and interest showed a marked improvement this semester. Not only did D--- learn a lot from listening to the record at home, but also his younger sister, who was in the beginner's class. Their mother commented about how the children enjoyed the record at home. Playing with the record was a motivating factor in creating a new interest in the violin for D--- and resulted in a marked improvement in his attitude and performance.

Fletcher Record

Student Number 1 Grade 5 IQ 110

S--- has had a very poor attitude and has not accomplished what she should have for the time she has been playing. She signed up for so many activities that she did not do anything very well. Her interest in violin picked up after the records were distributed, as she learns quickly by imitation. Gradually, her work started improving to the point that her parents bought her a new violin. Toward the end of the semester she began to settle down in class. I feel that the records had a definite effect on S---'s work as I can vouch for a marked improvement in this child.

Student Number 2 Grade 5 IQ 119

T---'s attitude and progress showed much improvement during the second semester with the use of the record. She really took to the records, and of all the children in the class, she enjoyed the drill tunes the most. She repeatedly said, "This is fun" as we played the drill tunes. The records were a definite factor in reviving T---'s interest. Toward the end of the semester she was the first to arrive in class to show me her practice card filled out for every day of the week. I have been delighted with the progress T--- made this semester. She developed a much more positive attitude after using the records.

Student Number 3 Grade 5 IQ 86

S--- is a weak player but very conscientious and never misses a class. She does not seem to become discouraged even though she does not accomplish much. I think she listened to the records and enjoyed them. It is difficult to say how much the records helped her other than enjoying the listening, as there was no great change noticed in her playing.

Student Number 4 Grade 5 IQ 113

P--- was one of the three uncooperative students I had this year. P--- was very tall for her age and extremely self-conscious about her height. She refused to stand to play even though I placed her among the tallest students in the class. I always had difficulty with her around program time as she never wanted to perform and in orchestra wanted to be placed "way in the back." She had a very poor attitude and was a real behavior problem in school. Patricia used a violin borrowed from a neighbor and the bow was a wreck. She was not willing to accept corrections and in general behaved in a very immature manner. I hoped my patience with her would pay off some day as she did have talent. After having the records for about two months, she came to class one day with a new bow that they bought to go with the borrowed violin. Immediately she began to play better and her morale went up. Instead of sulking, she began to volunteer to play something from memory. Needless to say, I was delighted with the improvement in this girl and I feel quite certain that the records played an important part in creating for her a new interest in the violin.

Student Number 5 Grade 5 IQ 106

D--- had the misfortune to break her arm at the very beginning of the semester when the records were given out, so she was unable to play for about six weeks. However, she never missed a class, and used the records faithfully to study and keep up with the work. When D--- returned to class with the violin and was able to play, she actually had learned every piece we had done and even memorized several. Although her position left much to be desired--especially after having the cast on her left arm--she did know the music as a result of listening to the records.

Student Number 6 Grade 5 IQ 106

J--- was a member of the Safety Patrol which conflicted with her violin class lesson. Her work began to slide, but her interest was renewed when she received the records. The novelty was short-lived, but finally she began attending class regularly. Her interest was restored and she began to accept corrections with a better attitude. She began to improve steadily and at the end of the semester was grateful and appreciative of everything. Listening to the records made her very aware of intonation, as she had allowed her playing to become careless. Her tone improved considerably with the martelé studies.

Student Number 7 Grade 4 (No score available)

L--- was a fine student. She moved to Southern California May 1, and before leaving her mother came in to express her appreciation for what the records had done for L---. L--- was musical and industrious, and went ahead on her own with the music and records. I was sorry to lose her.

Student Number 8 Grade 4 IQ 112

C--- was a poor student in class, apparently lacking the interest and enthusiasm for the instrument. She is quiet and indifferent, and even though she attended every class was very apathetic. I doubt whether she ever opened the case between classes, and she did not use the records. I kept hoping I could ignite a spark here, but I doubt if she will continue next year.

Student Number 9 Grade 4 IQ 126-135

S--- has been a very ambitious child. She is very small, and has been struggling with a full-size instrument ever since she started. However, S--- was interested and determined and was intent upon learning to play. She never missed a class, and I believe it was a real pleasure for her to have the records to listen to as they were a short-cut to practicing because she could learn the music by listening instead of working so hard on that large instrument. In spite of her difficulties, she never allowed herself to become discouraged. She was very interested and always had a positive attitude about her work.

Student Number 10 Grade 5 IQ 99

S--- is a delightful child and a pleasure to teach. She had been a very conscientious worker. It was interesting to watch S---'s reaction when, after being very puzzled as to how to play something, her expression would suddenly brighten as she grasped the idea. She used the records as a study aid listening to the music as an aid to solve any problem in pitch or rhythm. The records were of great value to S---.

Memphis Evaluation

In January, 1969, Project staff member Don Miller established a center to test the Project tune record in Lausanne School, a private boarding school in Memphis, Tennessee. The tunes were taught without the use of the record during daily forty-five minute classes. Records for outside practicing were given to four of the seven students in the class.

The students' performance was recorded three times during the research: February 18, March 11, and April 15, 1969. The tapes were then evaluated by Don Miller and a Project graduate assistant. On a five point scale, the control group showed a mean score of 3.3, the research group, 3.0.

The teacher, Ethel Scrivener, reported that an amusing situation developed after the records were issued. The three students who did not receive recordings were determined to outdo their classmates in the research group and therefore practiced much more diligently than the four students who received records. Thus, it appears that the ensuing rivalry was a greater stimulus than the recording.

Des Moines Evaluation

An informal test of the effect of the recordings on home practicing was conducted by two teachers in Des Moines, Iowa. No objective tests to measure student progress were administered.

Cheryl Kutscher, Instructor in the Des Moines Public Schools, used the Project tune record from November, 1968 through May, 1969 with seventy-three beginners and remedial students, who received one half hour class or private lesson per week. Mrs. Kutscher submitted periodic reports, portions of which are quoted below.

Report of November 14, 1968

"After several weeks of trial and error, the records seem to be a hit! The students certainly enjoy practicing with them, and the records definitely improve their practice habits."

Report of February 9, 1968

"The main advantage of the record is that it aids home practicing. I was amazed with the intonation improvement in some of my students after they began using the record. It also helps rhythm and style. The combination of familiar tunes, the string quartet style, and harmony of this record make it unique as far as my knowledge of records for violin study goes."

Mary Sexton, Des Moines private teacher, used the tune records with three second-year pupils, two third-year pupils, and five remedial students. She reported: "An intelligent and regular listening session with the record, preferably in the student's home, cannot help but be most beneficial. It can serve as the best kind of reminder of the musical sounds the student is trying to learn to create, in rhythm, intonation, style of bowing, and most important, quality of tone, and sound of a musical phrase."

Summary

Objective tests in the out-of-state centers did not produce conclusive evidence regarding the value of the use of records in string instruction. No appreciable difference in the progress of the students could be substantiated owing to the use of recordings at home. Most of the teachers commented enthusiastically on the music and records and indicated that they would like to use the records as soon as available. Most of the children also liked the record, although no consistent pattern concerning their use at home could be established. Some of the children practiced diligently with the record; others used it very little. Many of the parents reported favorably on the use of records, and in a number of cases, favorable changes in attitudes were noted.

Possible reasons for lack of conclusive data concerning the benefits in using the records are:

1. The short duration of the tests.

2. The difficulty of establishing accurately matched and sufficiently large test groups.

3. The difficulty in obtaining accurate evaluation on such an elusive topic as progress in violin playing during a short test.

4. The teachers' use of the records during class in the control classes in the largest center, in spite of instructions not to do so. This negated the validity of test, since the children in these classes heard the records on an average of twice weekly and therefore could not be considered as unaffected by them.

However, the test was very helpful in providing important information concerning sequencing and structuring of recordings for use in the public schools. Practically all of the available recordings (among them the widely-used records of Suzuki) present materials at full speed. The chief criticism of the teachers in this research was the speed of the tunes, which were recorded up to tempo. Most of the criticism in this respect came from the Terre Haute center, where none of the teachers except the Chairman of String Instruction were string majors. The great majority of these teachers indicated their preference for records which present materials at greatly reduced speeds, at least for the first stages of study. This reaction is rather typical of string teachers (both majors and minors), and points to the fact that the large body of the string profession must yet learn that slow and fast practicing requires basically different motion patterns and motor stimuli. It appears that Shinichi Suzuki is aware of this principle, since his students (as well as his records) display performances rather on the fast side. Few teachers have learned that speed and correct motion patterns can be established simultaneously if short sections of compositions are practiced. Experts in kinesiology and physical education emphasize this principle.[1] Incessant slow practicing will not lead to correct motion patterns in a fast tempo, and lack of freedom in the playing of the majority of our string students is partly caused by the teacher's reluctance to drill short segments up to tempo.

However, for comprehension and improvement of reading facility, the production of slow practice records is advisable. Such implementation belongs to the distribution stage. The research indicated another need for revision: the reduction of the number of bands and increase in the visible space between them. This will allow the teacher to find the desired selection more quickly.

Footnotes

[1] See L. E. Morehouse and J. M. Cooper, Kinesiology (St. Louis: C. V. Mosby Co., 1950), p. 214.

CHAPTER FOURTEEN

OTHER ACTIVITIES

Contemporary Music Inspired by the Project

An unexpected and gratifying by-product of the research was the new contemporary repertoire inspired by the Project. While the original proposal for the grant did not include plans for the development of new literature, two significant bodies of new repertoire evolved quite by chance. The Project-inspired sources of new materials were the contemporary pieces, commissioned under the direction of Margaret Farish, and the pieces composed by Stanley Fletcher of the University of Illinois.

During the first year of the Project, Margaret Farish, violinist, music educator, and author of the source book String Music in Print, visited the Project Director and inquired about the feasibility of a project designed to develop musical materials in the contemporary idiom for the elementary stages. Such material could then be played by the children in the Project. After Mrs. Farish and the Project Director had worked out the details of the plan, they submitted to the U. S. Office of Education an application for a Small Project grant: A Plan for Developing Performance Materials in the Contemporary Idiom for the Early Stages of String Instruction.

Upon receipt of the grant, William Mullen, graduate assistant in composition, was appointed to write a series of trial pieces based on the instructions of Mrs. Farish and Paul Rolland.

Mrs. Farish prepared a comprehensive manual: Composers Guide for Writing Violin Music for Children. Herbert Bielawa, Ralph Shapey, Seymour Shifrin, Alan Shulman, Halsey Stevens, and Richard Wernick were commissioned to write solo or ensemble pieces (observing the guidelines presented by Mrs. Farish).

The pieces by Halsey Stevens were published by Helios Music Editions, Los Angeles. The Theodore Presser Company plans to publish the pieces by Ralph Shapey, Alan Shulman, and Richard Wernick in the near future.

The second body of materials incidental to the Project is the series of sixty-eight short solos and ensembles composed by Stanley Fletcher of the University of Illinois. The inception of these highly successful teaching pieces was quite accidental. Professor Fletcher, Endre Granat, and the Project Director were recording a group of selected pieces (highly recommended through survey questionnaires) that would be suitable for the second and third years of instruction for use in the Project. The recording session ended with a feeling of dissatisfaction in the materials, many of which were either old-fashioned, contrived, or compromised to fit the grade level.

At this time, Professor Fletcher, who has composed a number of teaching pieces for violin and piano, offered to write music which would be tailored to fit particular needs, and which would be genuine rather than contrived. Thus, sixty-eight solos and ensembles were written, many of which were played by children in the Project classes through the permission of the composer.

The idiom of these tunes is current. The harmonic and rhythmic structures, frequent use of chromaticism, and a logical interval and fingering sequence make this material more attractive than much of the repertoire currently in use.

Since the cooperating teachers in the state-wide trial of the materials were free to use musical materials of their choice, the Fletcher tunes were used in some of the trial classes. The response of pupils and teachers to the materials was enthusiastic.

Selected contemporary pieces and Fletcher tunes were performed in several of the Project films and at numerous demonstrations by the Urbana-Champaign class. (These programs are presented in Appendix A.)

Video Tape Activities

The Urbana-Champaign Project classes were video taped frequently during their study. The accumulated video tapes, which serve as an excellent time lapse study of the gradual development of the classes, are submitted separately.

The class which began in the summer of 1967 was taped after four weeks and after twelve weeks of instruction. A video tape was also made of the program presented on May 26, 1968 by over one hundred children in the Urbana classes of 1967-68. Several other video tapings of the Urbana-Champaign demonstration class took place, the last of which (taped in July, 1970) was broadcast over WILL-TV on November 27, 1970.

CHAPTER FIFTEEN

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

To develop and test materials designed to establish good playing habits and to alleviate excessive tension was the goal of the University of Illinois String Research Project. The materials were organized into a two-year curriculum for beginning students, or they were applied in remedial study.

The principal product of the Project is the film series in color "The Teaching of Action in String Playing," consisting of seventeen films. The introductory film "Principles of Movement in String Playing," presents an overall view of the program, and thirteen single concept films deal with specific problems of string playing. One film deals with rhythm training, another presents remedial aspects of the course, and the film "Young Violinists in Action," offers a final report on the progress of children trained under the Project.

Coordinated with the films are the Suggested Curriculum Guide, classroom Wall Charts, and Teachers Manuals.

Additional materials developed and tested were a tune record and three exercise records. Their primary purpose was to provide basic materials for the efficient learning of routine tasks, in order to provide time in the curriculum for movement education and refinement.

The materials were used and tested in twenty-two Illinois schools, as well as in the local program. Five out-of-state centers participated in additional testing of some of the materials.

In addition, over fifty national, regional, state-or university-sponsored teachers' meetings and the White House Conference on Children witnessed the results of the Project through film demonstrations or performances by the local Project classes.

The elated response to these presentations, as well as the diligent testing program (described in detail in this Report), witness the fulfillment of Project goals and indicate that movement education, paired with rhythm training, can indeed produce highly superior results in the class teaching of string instruments.

Recommendations

Teacher-training institutions hold the key to the future of string instruction in the schools. By providing their trainees with the products of this Project and with other forward-looking material, colleges could produce a generation of string teachers well-equipped to deal not only with musical problems but with problems inherent in teaching complex motor skills. String teachers should also become familiar with kinesiologists' and physiologists' findings related to the learning of motor skills. They should find ways to instill playing skills in a manner that does not frustrate the student but, rather, gives him comfort, confidence, and a sense of well-being and accomplishment.

Programmed teaching materials and the use of audio-visual aids point to a new era of efficient instruction of string instruments. With well organized,materials the routine tasks of learning may be accomplished by the student with a minimum of assistance from the teacher. The teacher then can concentrate on the refinement of motion techniques, tone production, intonation, and musicianship.

APPENDIX A

PARENTS' COMMENTS

AND

PROGRAMS PRESENTED BY THE URBANA-CHAMPAIGN CLASSES

THE URBANA PROGRAM
COMMENTS OF PARENTS

May 24, 1968

Dear Parents:

We would greatly appreciate your comments concerning the string instruction your child has received. Please tell us whether this program was beneficial and meaningful to your child. We also invite criticisms. Your comments will be helpful to us in considering the continuation and content of the instruction.

COMMENTS CONCERNING STRING INSTRUCTION:

1. In general, we have been very pleased with the progress Cindy has made during this year. She enjoys the lessons and rarely needs to be encouraged to practice. Her sense of rhythm and ability to sing on pitch have improved too. One other thing which we like is the lack of self consciousness. All the children seem perfectly at ease in performing in front of strangers or families. Mr. M.V.K.

2. I think it has been a wonderful experience for Ward and I know he has profited much from the program and the careful and professional guidance he received from his teachers. Mr. C.D.

3. The program has given our child a firm foundation in music as well as the correct basic violin techniques. Mrs. B.A.R.

4. I really have nothing but praise for the Project. I feel the Project was profitable for Jim, not only in learning to play the violin, but in improving his ear and timing. Mr. & Mrs. M.A.S.

5. We have been very pleased with the instruction and the materials Tom has received. We feel that he is very fortunate to be in the program. Mrs. W.J.W.

6. We have been very pleased with Timothy's participation in this Project. When he began he was unable to move rhythmically with the music. By this spring, however, he had improved 100% and was able to march, walk, and participate confidently in all aspects of rhythmic movement. Mrs. H.A.

7. You are to be congratulated for a job well done. We were very pleased to have our daughter in this program and she too has enjoyed it. Mr. & Mrs. M.D.S.

8. The program was beneficial and meaningful to our children. In addition to developing an ability to playing another instrument (they also play piano), they have started to have broader perspective of music-appreciation. Mr. S.M.Y.

9. We have found that the past year's musical venture has been exciting, challenging, and rewarding. That the children usually practiced daily with a minimum of parental urging should testify in part to the success of the program. Maintaining a child's interest, particularly during the first months, is indeed an accomplishment. In this respect, the record was invaluable. Both records while basically instructional were a fine source of encouragement as well as pleasure. Mrs. S.S.

10. We were very pleased with the calibre of instruction presented during the past year. Our first grader always seemed to regard the exercises as fun and the method of presenting rhythms in word and rhyming patterns seemed to enable her to "catch on" to note reading much more quickly than my other daughter who also takes music lessons. Mrs. R.E.V.W.

11. I am very pleased with the amazing results your String Research Project has brought. The concert was delightful. Mrs. Z.A.

12. I believe Jessica profited from the early rhythm exercises and transferred some of these skills to the piano where I felt her rhythm and timing had previously been her weakest area. Early in the year she also showed a marked improvement in singing (and we are not a singing family). She began to go through old books (nursery rhyme books, etc.), singing and clapping them. She had never done that before. Mr. & Mrs. F.H.

13. We were very pleased with the string instruction that the children received this year and perhaps, more important, the children enjoyed it. Mr. H.V.

14. All of us, my son, my wife, and I have derived enormous satisfaction from the program. It has given Matthew a much greater interest in music than he had previously shown, and a much better sense of rhythm. His technical facility has come along at a more rapid rate than I would have envisaged from his participation in a class of that size. Most importantly, he wants to continue this fall. Mr. S.F.

15. We felt this was a successful year for our first grader. We heard parents' comments earlier that the children did not learn enough songs, but we felt learning to handle the instrument properly was more important. Mr. W.E.S.

16. Becky wasn't too sure before she started that she would like violin, but she likes it very much now. Mr. R.L.T.

17. David has done well considering the limited practice sessions. Just now he is beginning to show more interest and we are eager to have him continue this summer and next year. Mrs. M.L.

18. Our son was eager to begin violin lessons and I believe sustained an interest in his instrument throughout the year. He never balked about going to lessons and though he practiced infrequently at certain times during the year, he enjoyed his practice sessions. Whether our child becomes a violin player or not is of little consequence. We felt that the opportunity to participate in this project was most worthwhile and we look forward to next year, as he does, too. Mrs. D.W.B.

19. Doug enjoys music and was enthusiastic about the idea of playing the violin. He likes to sit at the piano and play tunes he has heard and seems to memorize quickly. He doesn't practice as much as I'd like but does seem to do well because it comes to him quickly and easily. Mrs. E.B.H.

20. As I attended the Saturday morning sessions I thought that the children responded much better when the films were followed by instruction in what the film showed, i.e. actual follow up. Also they enjoyed working themselves. We felt it was really quite remarkable to see what they could do. I feel, however, that in Sarah's case and possibly most others, third grade is a good starting point. I would not have enrolled her earlier. Mr. M.J.B.

21. I consider the hour of instruction to be very beneficial to older children. I think our son, having a man teacher, has shown him that music is not for girls alone. Mark is very impressed with his teacher. We are grateful for our son to have this opportunity to learn a string instrument. Mrs. E.P.

22. I commend very highly the program for some children and the idea as a whole. However, for Jon it was very difficult to become motivated at home. During the sessions after school he seemed highly interested; however, at home he never established the habit of regular practice and only several times even played the violin at home without a fair amount of pressure from one or both of the parents. The thing he disliked most was having to give up his play time on Saturday morning. Truthfully, he resented this so much that it carried over and generalized to the project as a whole. Mrs. P.S.

23. Mary Grace thoroughly enjoyed her experience with the violin. It was an enriching experience and she learned to work and have fun with a small group of children she would not have gotten to know otherwise. I think that both her time and mine was well spent.

24. We believe that Jeff has learned a great deal this year. Jeff has progressed very well and we hope he will continue. His enthusiasm is good, largely due to the ability of his teacher. You are to be complimented on a fine program and I hope it will be renewed. Mr. & Mrs. R.J.M.

25. Ted has enjoyed the program and has been eager to attend. Since he is young, it was apparent that he would find it easier to continue if he had supplementary private lessons. Mrs. E.B.

26. Peter enjoyed playing his violin at home during family music sessions--with his father playing the piano or the guitar. Often he would suggest such duets even though solitary practice was of no interest to him. We think the instructors were especially good and that they had a most pleasant and patient attitude toward the children. Mrs. C.M.S.

27. When I first heard of the String Project instruction program, I thought it was an "opportunity of a lifetime" for my daughter. As the first year is ending, I am convinced of its value for so many children that would not have this opportunity. Jill has received helpful instruction and enjoys the program. I am amazed at the many things they have accomplished and can do. Mr. & Mrs. O.S.

28. I feel the classes on Saturday mornings were too large to be of much benefit. Otherwise, I have nothing but praise for the program. The teachers were excellent and very patient. Mrs. R.H.

29. We have been very pleased with the instruction and with Beth's progress. I think she is just learning the value of practice--the recitals were a great incentive--and hope she will do better in the fall. Mrs. R.H.G.

30. Like all class programs, the instruction is too slow for some students and too fast for others. Any experiment such as this which brings more music into the lives of the many children is valuable. Mrs. J.K.N.

31. We have been very pleased with the program. The instruction and instructors have been excellent. We are appreciative of the fact our child has had the opportunity to participate in the program. Neither parent plays violin, so we feel it has stimulated an interest which we may not have on our own been able to excite. Mr. & Mrs. B.C.

32. Sally has enjoyed the program very much. As far as we are concerned we appreciate the opportunity for her. Sally is quite musical--she plays the piano quite well, has always liked to sing, wants to learn to play a guitar, enjoys her ballet, etc.--so that one other good aspect has been the chance for her to learn to play the violin in school--avoiding the necessity of transport to another lesson and not taking up very much more of her diminishing free time. Needless to say, also, not having the expense of further private lessons is appreciated. Mrs. C.G.T.

33. Susan has profited and enjoyed immensely this program. Our thanks to the Director and his staff for their tireless effort and dedication. We appreciate it very much. Mr. & Mrs. Y.T.L.

34. In general I believe the program has been of good quality and you are to be congratulated for the progress you have made with this large group. Mr. J.L.M.

PROGRAMS PRESENTED BY THE URBANA-CHAMPAIGN PROJECT CLASSES[1]

University of Illinois String Research Project
Urbana Classes--Final Program
May 26, 1968
Urbana Junior High School

I. Demonstration and Pieces by All Classes

Tuning
Schubert March--Case Walk
Hot Cross Buns--Stepping the Beat, Clapping and Singing the Melody
Statue of Liberty Game
Hot Cross Buns--Playing on D, A, and E strings
Mary Had a Little Lamb--D Major, d minor, a minor, A Major
French Folk Song--Solo Verse by Cello Class
Theme from Tschaikowsky's Symphony Number 4
Skip to my Lou--Open String Rhythm Patterns, Tapping, Melody
Old MacDonald--Rhythm Dance by Younger Children
Pop Goes the Weasel--Rhythm Game
Barcarolle--Open String Bowing with Melody

II. Demonstration and Pieces by Advanced Class

March
Cradle Song
Irritable Cuckoo
America the Beautiful

III. Camptown Races--Case Walk--All Classes

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[1] The program on May 26, 1968 featured the students in the trial program in the Urbana Public Schools (approximately 120 children). The subsequent programs and demonstrations were presented by the Urbana-Champaign "Advanced Classes."

UNIVERSITY OF ILLINOIS STRING RESEARCH PROJECT
Paul Rolland, Prof. of Music, Project Director

Demonstration-Program by the Urbana, Illinois Project Class

National Convention

AMERICAN STRING TEACHERS ASSOCIATION and the

MUSIC TEACHERS NATIONAL ASSOCIATION

Sheraton-Gibson Hotel, Cincinnati, O., March 11-12, 1969,9:00-10:30 A.M.

THE TEACHING OF ACTION IN STRING PLAYING

The techniques and teaching principles presented in this program are explained in detail in the project films, manuals, and class room picture charts. The current series principally deals with the violin, although most of the musical materials are developed for the low string instruments as well. In addition to the films and manuals, the Project is developing a series of recordings, tunes, and exercises with their musical illustrations for the early stages of instruction.

TUNING The child is involved in the tuning process from the start. The teacher does not take the instrument away from the pupil for tuning. At first, the pupil plucks the open strings with left hand pizzicato using the 3rd and 4th fingers while the teacher tunes. As a next step, he is encouraged to tune using fine tuners. There is a fine tuner for each (metal) string, preferably the Thomastic tailpiece-tuner. At the third stage of tuning, the student draws the bow and the teacher tunes. Finally, the pupil tunes the professional way.

EARLY SHIFTING MOVEMENTS Left arm stiffness is avoided by the introduction of exploratory shifting movements at the early stages of instruction. The three basic fingerboard locations, the Low, Middle, and High positions, are introduced almost from the start. The "Shuttle Game" is practiced silently and also with the use of left hand pizzicato and leisurely shifting movements to produce the harmonic series of open strings. ("Fluting," the "Ghost.") After these uninhibited shifting movements, controlled shifts are introduced in one string scales and by transposing melody fragments through the positions.

OCTAVE GAMES The "Octave Game" is introduced approximately during the fourth week of instruction and is progressively developed. Octaves are played between:

a) Open string & 3rd finger
b) Open string & its harmonic (4th finger)
c) Open string & 1st finger in the first position
d) Open string & 1st finger in the third position
d) Combination of a), b), & d).

HARMONICS

Harmonics are played early in the curriculum to encourage freedom of movement in both arms and for their appeal. The octave harmonics are played at first, then the "Shuttle Game" is played with the bow ("Fluting" "Ghost"), using glissando movements with carefree intonation of the harmonic series on each string.

MINOR THIRD TUNES

By adding the first finger's note below the third finger (Cello 4-1), new melody combinations may be formed. The Banjo Tune and Fiddler's Blues are samples written for this format. When the minor third is played between the open string and adjacent lower string (fingering--0-2; Cello 0-3), the finger is held down on the string while playing on the adjacent higher open string.

ARTICULATION

The difference between smooth and accented tone beginnings is emphasized. The Martelé stroke must begin with a "pop" and the tone must not be choked when stopping the bow. In the Detaché bowing a distinction is made between Simple, Accented, and Expressive tone beginnings. Spiccato bowing is introduced early because it helps bow balancing skills. It is silently practiced at first near the frog with bold bowing movements.

EXTENDING THE BOW STROKE

Freedom of movement and total body action is encouraged when playing long bow strokes. The weight transfer is encouraged. The "Fly Pizzicato" and single and double bow strokes followed by release aid in developing a free and relaxed body attitude. Good violin position and stance are developed through games and exercises demonstrated and explained in the project films, manuals, and wall charts.

USE OF THE 4TH FINGER

The 4th finger is first introduced in its low position, then extended upward for its normal placement.

VERTICAL & HORIZONTAL FINGER MOVEMENT

Strike the fingers quickly and release them with a springing motion. The chromatic movement of the finger is introduced early. Flexibility of the finger tip joint is needed for this task, and the development of this skill is helpful to intonation. In its lower placement the fingertip is steep; in its higher placement it is more oblique. The "Dancing Fingers" exercise is practiced for both actions.

FLEXIBILITY Flexibility of the bow arm is developed by practicing the "Follow-through" movement and the "Wandering" exercise. In the former, the hand and fingers are encouraged to continue the upward momentum of the arm in releases; in the latter, rhythm patterns are repeated with smooth bowing while shifting the point of contact between tip and frog (without lifting the bow).

Relaxation and avoidance of excessive static tension in any part of the body aids flexible bowing and left hand technique. Stiffness may be avoided by inducing movement where the stiffness occurs. For instance, the "Roll the Arm" exercise dissolves tension in the shoulder area. "Rock the Bow" relaxes the wrist and hand. Tapping the fingers on the bow and the thumb on the neck helps to dissolve stiffness in these parts. String crossing patterns are practiced for flexibility of all joints of the bow arm and shoulder.

VIBRATO The first exercises related to vibrato are left hand tapping movements which are similar to the vibrato movement. Tapping is frequently practiced for a few seconds at a time. The finger tip (usually the 3rd or 4th finger) is tapped against the chest, against the top left plate of the violin, or against the string. The tapping is done with a springing movement of the finger and hand, but the impulse must come from the arm. "The Tap & Hold" exercise brings this action to a still closer resemblance to the vibrato movement. Appreciation of vibrato is inculcated by the teacher, who sets an example and occasionally vibrates the pupil's fingers; this usually leads the child to finger vibrato attempts. The limited finger movements are gradually enlarged and coordinated with hand and arm movements.

* * * *

THE FLETCHER-ROLLAND TUNES

The following tunes performed on the program are part of a collection of some fifty pieces, each with a definite purpose, composed by Stanley Fletcher of the University of Illinois. The tunes follow the Project Director's suggested fingering sequence and contain progressive tasks for the development of bowing, left hand technique, and rhythm. These and other tunes were used in the Project.

CRADLE SONG (Octaves, legato style)

CHINESE FLUTE (Octave ostinato)

MARCH (Octaves, martelé strokes)

SWEET EYED SUE (Détaché variation) 3rd finger and open strings only, cello--0-4.

DREAMY EYED SUE (Harmonics, long strokes)

SPIRIT BUGLER & DISTANT FIFE & DRUM (Harmonics-détaché-arpeggio)

BANJO TUNE (Minor thirds, détaché-sautillé variation)

BLUE LULLABY (Low 4th finger, legato style)

SWEET MELODY (Long singing strokes, horizontal finger movement)

FIDDLER'S BLUES (Minor thirds, bow articulation)

RAGTIME TUNE (Horizontal finger movement, low 4th finger, articulation)

HORA (Flexibility, string crossing, speed development)

CONTEMPORARY PIECES

The program includes the following pieces commissioned by the Contemporary String Music Project directed by Margaret Farish, Research Associate.

Peter's March	Richard Wernick
A Musical Game of Tag	Richard Wernick
Duet for Violin and Cello	Alan Shulman
Lullaby	Seymour Shifrin
Bicinia	Halsey Stevens

Program by URBANA-CHAMPAIGN PROJECT CLASSES
Illini Union, Room A
Urbana, Illinois
March 23, 1969, 2:30 P.M.

The program presented in Cincinnati was repeated for the local audience.

Program by URBANA-CHAMPAIGN PROJECT CLASSES
Chicago Circle Campus
Chicago, Illinois
May 4, 1969

Dynamics	William Mullen
Peter's March	Richard Wernick
A Musical Game of Tag	Richard Wernick
Theme and Variations	Alan Shulman
Lullaby	Seymour Shifrin
You Can't Catch Me	Richard Wernick
Bicinia	Halsey Stevens
Duet for Papa Rolland	Janie Snyder

ASTA NORTH CENTRAL
REGIONAL CONFERENCE

Bloomington, Indiana
July 18, 1969
UNIVERSITY OF ILLINOIS STRING RESEARCH PROJECT, Paul Rolland, Director

DEMONSTRATION AND PROGRAM
by Urbana-Champaign Classes

TUNES BY STANLEY FLETCHER,
edited by Paul Rolland

Cradle Song
March
Dreamy Eyed Sue
Birds at Sunrise
Spirit Bugler
Distant Fife and Drum
Sweet Melody
Fiddler's Blues
Tiddly Pom Tune
Country Fiddler
O'Malley's Reel
Swinging Along
Argentine Tango
Parade of the Picadors
Peasant Dance
The Hora
May Day Dance
An Old Legend
Neapolitan Song

CONTEMPORARY PIECES
(Commissioned by the Contemporary String Music Project, Margaret Farish, Director.)

Peter's March	Richard Wernick
A Musical Game of Tag	Richard Wernick
Theme and Variations for Two Violins	Alan Shulman
Duet for Papa Rolland	Janie Snyder
Duet for Violin and Cello	Alan Shulman

Instructors: Champaign: Jerald Slavich
Ed Wilcox

Urbana: Paul Rolland

Program by Urbana-Champaign Project Classes
Illini Union, Room A
Urbana, Illinois
July 27, 1969

The program presented in Bloomington, Indiana was repeated for the local audience.

THE UNIVERSITY OF ILLINOIS STRING RESEARCH PROJECT

Prof. Paul Rolland, Director, Presents:

Films and Audio-visual Aids on Action Studies for Violin

Instructional Pieces by Stanley Fletcher, Halsey Stevens
Alan Shulman, Richard Wernick

October 23, 11:00 A.M.
Smith Music Hall Auditorium
University of Illinois, Urbana

November 2, 2:00 P.M.
Lovejoy Auditorium
Southern Illinois University,
Edwardsville

A. Film Demonstration

B. Program

From the Tunes Published Under the Contemporary String Music Project
(Margaret Farish, Director)

Peter's March for Two Violins . . . . .Richard Wernick

Bicinia . . . . Halsey Stevens

Theme and Variations. . . . . Alan Shulman

A Musical Game of Tag . . . . .Richard Wernick

— · —

Duet for Papa Rolland . . . . Janie Snyder Uni High
1962

Tunes by Stanley Fletcher
Pedagogical Sequence and Editing by Paul Rolland

March (Octaves)
The Boom and the Chick Chick (Octaves)
Dreamy Eyed Sue (Harmonics)
Spirit Bugler, Distant Fife and Drum (Harmonics)
Birds at Sunrise (Glissando - Sul Ponticello)
Sweet Melody (Major and minor thirds)

Fiddler's Blues (Minor thirds - staccato bowing)
Tiddly Pom Tune (Ricochet)
O'Malley's Reel (Speed study)
Argentine Tango (Minor thirds)
Country Fiddler (String crossing and speed)
Mayday Carol (Major pattern)
Mayday Dance (Major pattern)
An Old Legend (Minor key and whole tone pattern)
Parade of Picadors (Augmented 2nd and Augmented 4th)
Neopolitan Song (E Major key)
Peasant Dance (Whole tone patterns)
Hora (String crossing and speed study)

Demonstration-Program by the Urbana, Illinois Project Class

Twenty-Fifth Annual Midwestern Conference, Ann Arbor, Michigan
January 17, 1970

Sponsored by the

MICHIGAN SCHOOL BAND AND ORCHESTRA ASSOCIATION

MICHIGAN SCHOOL VOCAL ASSOCIATION

MICHIGAN MUSIC EDUCATORS ASSOCIATION

MICHIGAN UNIT, AMERICAN STRING TEACHERS ASSOCIATION

UNIVERSITY SCHOOL OF MUSIC

UNIVERSITY EXTENSION SERVICE

The previous program was repeated with the addition of the following:

Play for the Young	Seymour Shifrin
Lullaby	Seymour Shifrin
Duet for Violin and Cello	Alan Shulman
Duet for Violin and Cello	Halsey Stevens

Advanced Class

PART II: Other compositions played by the Advanced Class

Two Duets for Violin and Cello . . . . .Halsey Stevens

Duet for Violin and Cello. . . . . .Alan Shulman

Concertino
Quickly. . . . . .George Perlman

Concerto in G Major
Allegro - Largo-Allegro. . . . . .Antonio Vivaldi-Kuchler and Herrman

PART III: String Research Project Films

"Principles of Movement" "Young Violinists in Action"

ASTA NORTH CENTRAL REGIONAL CONFERENCE
Urbana, Illinois
July 16, 1970

UNIVERSITY OF ILLINOIS STRING RESEARCH PROJECT
DEMONSTRATION AND PROGRAM
BY URBANA-CHAMPAIGN CLASSES

The "Advanced Class" repeated portions of the previous program.

MUSIC EDUCATORS NATIONAL CONFERENCE, NORTH CENTRAL REGIONAL MEETING
Cincinnati, Ohio, March 12, 1971, 8:30 a.m.
Stouffer Inn, Bamboo Room
PROGRAM BY THE UNIVERSITY OF ILLINOIS STRING RESEARCH PROJECT CLASS
Paul Rolland, Director; Don Miller, Marla Mutschler, Associates

Peter's March . . . . Richard Wernick
Cradle Song, The Brook .Schubert
Concerto, G Major, Allegro. . . . . Vivaldi

Film: "Principles of Movement in String Playing"

Rhythmic Studies No.1 - Poco Allegro . . . . Martinu
Ruthenian Song . . . . Bartók
Allegretto . . . . Szervánszky
Ruthenian Dance . . . . Bartók
Peasant Dance, Tango, Hora . . . . Fletcher
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UNIVERSITY OF ILLINOIS STRING RESEARCH PROJECT

Paul Rolland, Prof. of Music, Project Director

Demonstration-Program by the Urbana-Champaign, Ill. Project Class

NATIONAL CONVENTION, CHICAGO, ILLINOIS

OF THE

AMERICAN STRING TEACHERS ASSOCIATION

MUSIC EDUCATORS NATIONAL CONFERENCE

March 8, 1970, 10:00 A.M.

CONRAD HILTON HOTEL NORMANDY LOUNGE

The previous program was repeated with the addition of:

Concerto in G Major
Allegro . . . . .Vivaldi-Küchler

Program by Urbana-Champaign Project Classes
Illini Union Room A
May 3, 1970

PART I: Tunes by Stanley Fletcher

The Birds at Sunrise Sweet Melody Fiddler's Blues Banjo Tune

Junior[1] and Advanced Classes

* * *

Square Dance I and II Pirate Song Creole Tune

Junior Class

* * *

Tenor Aria Neapolitan Song Dance with Castanets
O'Malley's Reel Space Ragtime Tune

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[1] The Junior Class consisted of students who began as first or second graders during the 1967-68 program in the Urbana Public Schools. Ten of these children served as a laboratory group for the Project Director's college course in string pedagogy during 1968-69 and 1969-70.

APPENDIX B

ARTICLES ABOUT THE URBANA-CHAMPAIGN CLASSES

CHAMPAIGN-URBANA COURIER
Feb. 12, 1967

Young Violinists Polished

Children Trained in U.I. Pilot Program.

Selected young violinists from Champaign - Urbana and area schools are learning how to give a more polished performance under a pilot program funded by the U.S. Office of Health, Education and Welfare and administered by the University of Illinois Division of University Extension.

Known as "The University of Illinois String Research Project," the program is directed by U. of I. music professor, Paul Rolland. He is chairman of the School of Music string department.

"The development of tension-free movements and better body coordination in violin playing," quality and speed of learning are aims of the program which already is attracting attention from many of the country's great teachers, Rolland said.

Taking part are, from Champaign - Urbana, Danny Foster, Clarence Suggs, Brenda Johnson, Mark and Michael Boling, Angela Chow, Robert Easley, Grant Miller, Lucy Lin, Nancy McWethy, Debbie Morger, Ilene Gusfield, Michael Marder, Mary Rick and Charles Walter.

Melanie and Alyce Cognetta, of Danville, and David Bullard, of Decatur, also are in the program.

The project will emphasize development of new materials for use by cooperating teachers during 1967-69. The materials will include 20 programmed films on violin teaching, recordings to help the listening learner, and a manual to guide the string teacher with new techniques. Correlated will be the development of contemporary musical materials for the student, to be used during the early stages of instruction.

Additional pilot classes will be organized during 1967-69 in a number of Illinois communities.

Other U. of I. faculty members associated with Prof. Rolland in the project are Prof. Richard Colwell, associate research director; Kelvin Masson, research associate; Prof. Endre Granat and Prof. Donald Miller, teaching and curriculum, and Prof. Arthur Johnson, administration.

Miss Margaret Farish, Evanston, author of the encyclopedia, "String Music in Print," has a small separate grant, and is working toward development of new music materials, aided by a U. of I. graduate assistant, William Mullen. Ralph Shapey, wellknown Chicago composer, is working on a correlated research project and is an adviser to Miss Farish.

CHAMPAIGN-URBANA COURIER
June 21, 1967

Urbana Selected For String Project

Urbana schools have been selected to participate in a University of Illinois String Research Project, it was announced Monday night at the Board of Education meeting.

Robert Jorgensen, co-ordinator of music for Urbana schools, indicated that the project is expected to attract interest in stringed instruments, which have had a dwindling number of pupils.

The project will offer beginning string classes for children who will be in the first through fourth grades at Leal, Webber, Wiley and Yankee Ridge schools. The program for the first two grades will be offered in the fall.

The string research project, directed by Prof. Paul Rolland of the University of Illinois, is supported by the federal government under its Office of the U. S. Commissioner of Education.

The purpose is to develop teaching methods which will establish tension - free and natural playing movements, good tone production and a firm basic technique for the string student.

AMERICAN STRING TEACHER
Vol. XVIII, No. 2 (Spring, 1968)

An Interview With Paul Rolland

By ALBERT W. WASSELL

In this article reference is made to the University of Illinois Spring Research Project which is supported by the U. S. Office of Education under the provisions of the Co-operative Research Program.

FOREWORD

Paul Rolland, professor of violin at the University of Illinois, has had a distinguished career as a performer and teacher. His keen interest in teaching has taken him to many parts of the world to teach, study, and observe violin pedagogy. A reading of some of Rolland's government sponsored (United States Department of Health, Education and Welfare) project manual on "The Teaching of Action in String Playing," (The University of Illinois String Research Project, 1967), prompted Albert Wassell to submit the following questions. Rolland's answers give the reader a good idea of the contents of what will be a new and important treatise in basic violin pedagogy. One of Rolland's pre-publication manuals and its correlated film demonstrate the development of good violin position and posture through use of body balance and free movement.

Paul Rolland is a former president of the American String Teachers Association. He has written a number of published articles on string pedagogy.

Albert W. Wassell is director of music in the Trenton Public Schools (New Jersey). His interviews with well known personages in music and music education have appeared in periodicals from time to time.

Question: A. W. Wassell

I have had the privilege of a preview reading of your "The Teaching of Action in String Pedagogy." I was impressed with the many new ideas and approaches for teaching the beginning violinist. How much time (months, years) did you spend in this research before you formulated your study into this treatise?

Answer: Paul Rolland

I began to teach privately in 1930 and started to teach classes in 1940. Most of the ideas in the manuals were drawn from this continuous experience of teaching both privately and in class.

Q. Where was your laboratory teaching held?

A. I have been teaching pre-college students within the framework of the Summer Youth Music Project of the University of Illinois since 1950. Most of the ideas presented in the manuals were tried out in these classes. Most of the String Research Project classes were started in the fall of 1967. One pilot class was started during the last summer. These project classes will continue until June 1969 or for a period of two years. There were approximately 120 children started in Urbana who are taught by apprentice teachers. Approximately the same number of pupils are being taught in Champaign by the regular staff. There are new project classes in 12 centers in the state of Illinois using our project materials. These classes have several hundred pupils.

Paul Rolland

Q. What age level were the children?

A. In Urbana we have classes for the first and second grades and for the third and fourth grades. The other project classes are held for the third graders and above.

Q. Have you used your ideas in a remedial sense, that is, taking older students with bad habits and making them over?

A. Most of the work has been done in the remedial sense, especially in the Illinois Summer Youth Project where year after year students have come for short remedial classes.

Q. Have there been any particular teachers who have influenced your own teaching of late?

A. In my position as editor and publication chairman of ASTA, I had the fortune of being in the center of contemporary string development. In the hub of these activities, the exchange of ideas with the foremost teachers has been certainly beneficial. The names of Ivan Galamian, Roman Totenberg, Henri Temianka, Samuel Appelbaum and Shinichi Suzuki should be mentioned. However, I am indebted to my major teacher, Professor Waldbauer, in Budapest for the foundation of my playing and teaching.

Q. You have travelled widely in the past few years, here and abroad, to observe violin teaching. Russia and Hungary are two countries that I recall. Where have you seen teaching that has impressed you?

A. I have observed some of the best teachers in Hungary, Israel, Yugoslavia, Austria and Germany. The level of virtuosity was highest in Israel and Yugoslavia and fundamental teaching was the best in Hungary and Yugoslavia.

Q. Anything on the negative side?

A. The public school instrumental music education is wanting in most of the countries abroad.

Q. Are the good ideas you have seen abroad applicable to our situation in the United States.

A. Only for professional education.

Q. Is this foreign teaching the studio type—one to one approach, or in classes?

A. Most of the studio teaching abroad is of the master class type. One student plays and there are usually other students also listening in the studio.

Q. Please tell us of your background, training and experience.

A. Graduate of the Franz Liszt Academy of Music, Budapest, Hungary. Was solo and first violist of the Budapest Symphony and member of Pro Ideale and Lener string quartets. Was recitalist and soloist with Symphony orchestras, played in countries of Europe, in the near East and in America. Am a founding member and first Editor of the American String Teachers Association. Have been clinician and organizer of national and regional workshops for string teachers. Lectured in the spring of 1960 and performed in Austria, Hungary, Yugoslavia, Turkey and Israel under a State Department appointment as a specialist in the field of string instruction. Presently am professor of music and chairman of the string division of the University of Illinois.

Q. If you subscribe to the class teaching approach, how many pupils do you consider ideal for a class?

A. It is difficult to set down hard and fast rules. A less experienced teacher will have his hands full with three or four students while a veteran may effectively teach a class ten times this size. The age of the pupils should be also considered. Only very small classes should be taught at pre-school level or in the first and second grade.

Q. How often should such a class meet?

A. The more the better. The once or twice a week class will progress very slowly. However, programmed instruction and recorded materials such as we are developing in our project should help even where classes are less frequent.

Q. Your film-treatise is different from others in that it is very detailed in procedure in contrast to others which generalize more and are not too specific as regards the teaching process. Is the film-treatise now available for use by the public?

A. Our project materials will be in public domain if approved after the termination of the project in June 1969.

Q. Where can it be procured?

A. Distribution channels are yet to be organized. At the conclusion of the project this will be announced.

Q. As things now stand there are two booklets to your treatise, "Establishing the Violin Hold" and "Learning to Hold the Bow, Playing at the Middle with Short Bows" and, of course, the films. Does this make the complete treatise or will there be more?

A. In addition to the manuals that you have, there are others ready, such as: "Establishing Left Hand and Finger Placement in the First Position," "Principles of Left Hand and Finger Action," "Rhythm Training," "Bouncing the Bow," "Extending the Bow Stroke." There will be additional manuals to match the total of 20 short films produced under the research project. All of these deal with elementary aspects of violin instruction. It is hoped that in a later project the low instruments will receive their just share.

Q. There is so much new material in your treatise that I should like to quote sections and then ask questions about your statements and procedure. "The traditional practice of restricting the left hand to the first position for a long time is not a wise one." How long have you believed this?

A. As an apprentice teacher, I experimented with students who began to play in the positions right from the start. This was almost 30 years ago.

Q. Your frequent captions "Typical fault" and "Correction" are novel. You state in drawing the shaping of the left hand: "Light left hand pizzicato is used to established the correct attitude of the left hand. If the third and fourth fingers strum the open strings, the left hand automatically shapes into its correct setting over the fingerboard." Do you discard the first position hand moulding exercise; first finger down, second finger down, third finger down, say on the D string, with the cross over of the first finger to the A string as a good hand shaping exercise?

A. The finger drills you mention are time approved and necessary for the teaching of finger action. I do not discard these. The left hand pizzicato which I propose helps to establish correct attitude in the whole left arm and therefore is more than a mere finger drill. These are applied in addition to the usual drills.

Q. "Advanced tuning skills can rarely be develop in less than two years." Do you prefer a tuner for each string?

A. By this I mean the professional way. I do prefer a tuner for each metal string at the beginning stages.

Q. Any opinion on the use of Thomastic tuners?

A. Thomastic tail piece-tuner with good metal strings is the ultimate of beginner equipment. We have used these on as small as one quarter size instruments with excellent results. The strings stay in tune much better with this device.

Q. Your left hand *shuttle game* is good, too. So is, the left arm *Swinging Device*. Your *Tapping Device* is used "to promote agility in the left hand and fingers. Tapping motions are related to the technique of stopping the strings and to the vibrato." Have you used these three devices a long time?

A. I have used the tapping for vibrato beneficially for many years. The other two are of recent vintage.

Q. Your discussion on body balance and stance is very good, as is your discussion of playing while seated. How do you divide your teaching lesson in minutes: standing and sitting?

A. I prefer that beginners stand throughout their lesson. When they begin to play in an ensemble or orchestra then we have to bring in the chairs to the class. Ideally it would be best to get away from stands and chairs and use the overhead projector for note reading in homogeneous class teaching. Nevertheless, the student should be taught to sit properly as soon as he needs to do that.

Q. You show "Improvised name and Word Rhythms for shuttling and swinging the arm." I take it this is all left hand pizzicato with no definite finger placement on the fingerboard and no apparent tune emerging. These are rhythm exercises, then, to develop the left hand through pizzicato?

A. This is correct. However, open string rhythms should contain order and therefore have an element of tunefulness. The left hand pizzicato on the open string develops a surprising agility of the fingers. It strengthens the extensor muscles, which are weak by nature. Our flexors, the gripping muscles, are strong from birth. In fact, all beginners instinctively grab too much.

Q. *Caption* "Playing Open Strings with Melodies." Are you purposely holding off placing fingers on the fingerboard? If so, why are you so long on open strings?

A. I do not delay finger placement on the strings but advocate continuing open string work for a long time for refinement and constant review of violin positioning and shifting movements.

Q. Your Part II of this same "Establishing the Violin Hold" is interesting. Is the "Case Walk" a Rolland original idea?

A. Yes, the "Case Walk" is an original idea. Although the title has some resemblance to Debussy's Golliwog's Cake Walk.

Q. "The Statue of Liberty Game," another Rolland original?

A. The "Statue of Liberty" game is a variation of an idea of Suzuki (or Kendall?).

Q. And now to the bow. "The fingers of the right hand are practically in a perfect position for holding the bow when the arm is hanging down at the side." This is a simple but lucid explanation. How did you happen to hit upon this easy explanation?

A. This idea is very old. I believe I grew up with it. One of my early teachers must have told me.

Q. "While holding the stick with curved fingers, shape the hand, and make free movements, moving the stick up and down, sideways, and turning it." How much time would you suggest (in minutes) for such bow calisthenics?

A. Just a minute or so, but often and with frequent review.

Q. "Hold a short cardboard tube (for instance, one cut from a string mailing tube) in the left hand at face level at the approximate position of the violin bridge. Move the bow to and fro through the tube." This is a novel idea. How long have you been using this?

A. Since last year. Also, very effective is to move the bow over the left shoulder (although some people will resent rubbing off the rosin from the bowhair).

Q. You subscribe to early playing with short bows at the middle. There are more and more fine pedagogues who agree with this approach. I presume that your own early study was with the long bow method. If this is true, when did you discard the long bow approach?

A. Like most of my contemporaries I was started on long sustained bows. On the first lesson, I had a full page of Fermatas (birds eyes) over whole notes staring at me, and had to play them with slow hold bows. I discarded this approach in my early teaching when Professor Waldbauer recommended a method of Kuechler instead of the old Hohman-Bloch method. The Kuechler method was the most commonly used German method until the emergence of the excellent Doflein method. Suzuki's teaching also has the same source material, having studied in Germany in the 1930's. However, I am not in favor of limiting students to the experience of playing with short bows only. The exercising of fast casting movements which brings in coordination of all parts of the arm and body is introduced early in my teaching.

Q. In your "Materials" you suggest "Tunes for the String Player." Do you have a detailed discussion about placement of fingers in the student book?

A. Yes, the tunes have illustrated finger-charts and regular notations.

Q. How many tunes does it contain?

A. There are 23 melodies, most of them provided with a second part.

Q. Do you subscribe to the rote approach for beginners?

A. Yes.

Q. If so, for how long? If not, why not?

A. Rote teaching can go on indefinitely but not exclusively. I have been teachin technical formulas to my college students by Rote all these years. The "Rote and Note" approaches need not pose an *either or* arrrangement. The elements of note reading should be introduced early at least by rhythmic notation. (See "Rhythmic Games" which I sent you.)

Q. What are your ideas for note reading for the beginner?

A. I am sending you a copy of my "Kopy Kats" which gives you my idea how to start playing from notes. More will follow on this issue.

Q. I presume that the well established studies: Mazas, Kreutzer, etc., will hold for the student who will study to become a professional player. Agree?

A. Yes, but they should be pruned and abbreviated. The new techniques, rhythms, and tonalities must be given room in the curriculum. Mazas and Kreutzer do not prepare the students to play anything more advanced than the music of let's say Beethoven or Schubert.

Q. Do you consider the violin teacher training that a prospective teacher gets in college or conservatory sufficient today?

A. No, method classes are weak and apprentice teaching is scarce. A notable exception is the Texas String Project from which a number of good string teachers have emerged. At the University of Illinois we now have approximately 20 active student teachers participating in the teaching of children within one string research project.

Q. Do you think that we are now in a bona fide string rejuvenation?

A. Yes.

Q. Any suggestions for betterment?

A. Wider acceptance of the master class type teaching. Increased use of recorded music for the student.

Q. What are some of your gripes—with the teaching that you see and with the American student?

A. Poor use of the ear and the body in string teaching. Result: Lack of refinement and poor tone production. Not enough emphasis on individual achievement. The student who cannot play unless there is a section around will not go far! More selectivity in school instruction. Regroup classes according to achievement, not age. Give special help to the best students—allow them to move ahead. Make separate groups of the slowest ones.

Q. How does the future of string teaching look to you?

A. Up and coming unless contemporary composers put string playing out of business.

A. W. Wassell — Thank you, very much.

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CHAMPAIGN-URBANA NEWS-GAZETTE
May 25, 1968

Violin Pupils Give Concert

The University of Illinois **String** Research project will end **the** first of two years of violin **classes** in four Urbana schools **with** a demonstration concert at 4 p.m. May 26 in the Urbana Junior High School gymnasium.

More than 100 pupils from Leal, Webber, Wiley and Yankee Ridge Schools have been studying since October in classes taught by university graduate student assistants under the supervision of Prof. Paul Rolland.

The project, which is funded by the U. S. Office of Education, is developing films, records and music materials to be used in the teaching of "tension free motions" in violin playing.

Miss Deonne Orvis will direct the program which will include rhythm numbers and a special group of tunes composed for the project by Prof. Stanley Fletcher of the U. of I. School of Music.

The public is invited to attend.

CHAMPAIGN-URBANA COURIER
May 25, 1968

IN SUNDAY CONCERT

These three violinists are among those who will play at 4 p.m. Sunday in the String Research Project Concert at Urbana Junior High School. Left to right are David Voigtlander, 10, son of Mr. and Mrs. Henry Voigtlander of 802 W. Pennsylvania Ave., Urbana; Susan Lo, 9, daughter of Mr. and Mrs. Yuen Lo of 704 Silver St., Urbana, and Cynthia Healy, 9, daughter of Mr. and Mrs. James Healy of 405 W. Green St., Urbana. The children have been studying the violin since last summer with Prof. Paul Rolland of the University of Illinois School of Music.

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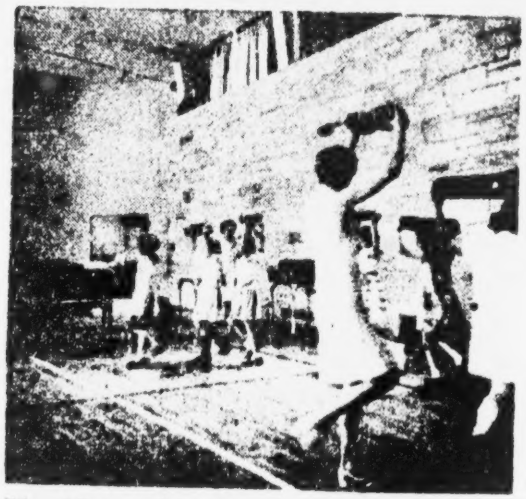
AMERICAN STRING TEACHER
Vol. XVIII, No. 3 (Summer, 1968)

My University of Illinois String Research Project Class

By MARYLYN SEXTON

Miss Sexton is String Instructor in the Lombard, Illinois Public Schools

I read with interest the article, "An Interview With Paul Rolland," by Albert W. Wassell (*American String Teacher*, Spring, 1968). It has been my privilege this past year as a cooperating teacher in Lombard, Illinois, to apply the methods and materials of Mr. Rolland's University of Illinois String Research Project.



The "Casewalk" strengthens the violin holding muscles. The children step, trot, or run to recorded music.

Having first met Mr. Rolland during my two-week teaching appointment to last year's Summer Youth Music at the University of Illinois, I was immediately attracted to his string project purpose and his methods for achieving it. As the title of the pre-published manual indicates, the project proposes "The Teaching of Action in String Playing." Necessary to this approach is the studied elimination of static bodily tensions.

Several sessions were held in which Mr. Rolland briefed me and other cooperating teachers on the project principles and the initial phases of instruction. Examples of these include:

1. Violin positioning exercises and games which include the use of the first, middle, and high positions from the start.
2. Frequent use of left hand pizzicato to align the hand to the fingerboard and to strengthen the fingers.
3. Bow holding and bowing exercises, including on-the-string and off-the-string bowing, with emphasis on free movement.
4. Developing a sense of rhythm through actions with and without the instrument. Rhythmic movements are performed with the beat, with the melody, or in combination.
5. Encouraging slight body movements in playing extended bow strokes to reduce unwanted tensions.

Beautiful violin positions result from frequent use of left hand pizzicato.

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This list is necessarily brief; detailed explanations, diagrams, and pictures of these actions are clearly set forth in the project manuals and films which present the various topics of instruction. Among these are: Establishing the Violin Hold, Learning to Hold the Bow, Establishing Left Hand and Finger Placement, Bouncing the Bow, Extending the Bow Stroke, Developing Flexibility, Developing Finger Action, The Martele and Staccato, and others.

The "Shuttle" combines the first, middle, and high positions from the start. It incorporates left hand pizzicato, silent shifting, finger tapping, or harmonics in free and smooth shifting movements.

After witnessing the application of these methods by Mr. Rolland and several of his graduate assistants to a third grade beginning violin class in Urbana, I was convinced that I wanted to try this approach myself. Granted approval by the Lombard School District 44 administration, I started three project classes last November, each having from seven to nine fourth graders. The violin-viola classes met for forty minutes twice a week. Each student received packets of tune and rhythm pages and two 12-inch LP records prepared by the project. These recordings serve as home study aids and background for rhythm and open string playing. One of them presents the tunes in practice and "concert versions;" the other is a drill record.

Through the project's carefully structured technique for teaching the correct positioning of the instrument, the children looked good from the start. They learned the tunes by rote and stood whenever bowing. In the first four to six weeks all bowing was done on open strings, and fingered notes were played pizzicato with the right hand, the instrument often held in rest position. The project films were shown periodically, each film presenting one of the topics already listed. The children responded favorably to them.

The "Fly Pizzicato" simulates long bowing strokes and is done with a well balanced stance to permit easy shifting of body weight.

There is a marked difference in terms of playing posture and freedom from excessive tension between these beginning classes and those of my previous three years of teaching. The excellent progress of my present students has shown me what is possible when the emphasis is placed on mobility and when undue tensions are minimized from the start.

The "Statue of Liberty" game leads to good violin placement.

Mr. Rolland has the remarkable ability to analyze a technique into its component parts and to make the step by step

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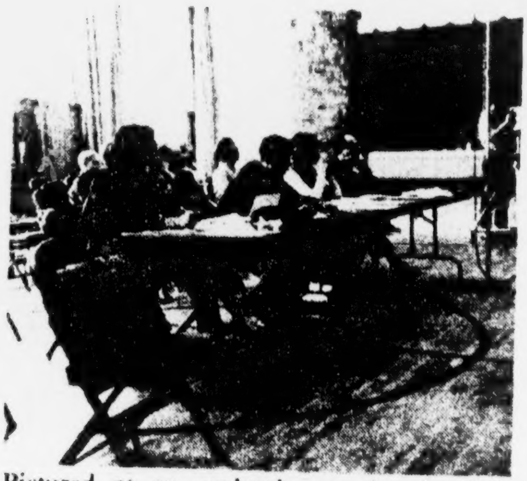
reassemblage possible for the young student. It is largely for this reason that my project students of one year are able to use whole bows, play harmonics, recognize and play octaves, bounce the bow, build major and minor triads, start with clean attacks, and produce resonant releases. Furthermore, they know what it feels like to shift to fifth position and beyond; some demonstrate embryonic vibratos. What's more their smiling faces show they like what they are doing.

Open string bowing is made interesting with a background of recorded music.



Pictured at an evaluation session in Wilmette, Illinois, are (from left) Professor Marvin Rabin, University of Wisconsin; Robert Shamo, Willowbrook High School orchestra director, Villa Park, Illinois; Margaret Farish, author of "String Music in Print"; and Victor Aitay, Chicago Symphony Orchestra Concertmaster.

These are the things that make for good string playing, and the Illinois String Research project is making the teaching of these things a rewarding experience.

THE SCROLL
Publication of the Illinois Unit of ASTA
Fall, 1968-69

University of Illinois

STRING RESEARCH REPORT

For the second year Illinois string teachers are contributing their skills in teaching Project classes in cooperation with the University of Illinois. The Project emphasizes the development of motion techniques which are free of excessive tension. Although the principles apply to players of all ages, the classes thus far have been for grade school beginners. The first year evaluation session held last spring showed that the majority of Project students excel in proper but relaxed playing positions and bowing movements. By their suggestions and criticisms, participating teachers have helped to further develop the instructional material.

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Teachers who have been with the Project since last fall and are continuing are Miss Bonzie Gilbert (Bloomington), Gerald Slavich and Ed Wilcox (Champaign), Norman Werner (Decatur), George Teufel (Elmhurst), Miss Ann Robert and Richard Casper (Peoria), Don Langellier and H. Wayne Pyle (Quincy), Sister Theodata (Wilmette), Milton Goldberg (Winnetka), and James Calhoun (Urbana). New Project centers are being considered for this fall in Lincolnwood, Alton, Jacksonville, Springfield, Morton Grove, Deerfield, Wheeling, Chicago Heights, and Des Plaines.

To help teachers in their work, films are being produced to show the teaching of correct movements. To date, the following have been completed: *Remedial Teaching; Establishing the Violin Hold, Parts I and II; Holding the Violin Bow; Violin Playing at the Middle of the Bow; Establishing Left Hand and Finger Placement in the First Position; Bouncing the Bow, Extending the Bow Stroke, Parts I and II; and Principles of Left Hand and Finger Action.*

In the final stages of editing are: *Rhythm Training; Developing Finger Movement; Martele and Staccato; Developing Flexibility*, and *Early Shifting Studies*. In preparation are a film on vibrato and bowing, and a film concerning principles of movement as applied to string playing.

Children participating in the classes see the films not less than three times during the two-year span of the program. Teachers view the films in preview instructional material in workshops held at the University. (A teacher's manual is provided with each film.

To help the individual student with his practicing, the Project is preparing a series of records with texts. The Project staff, in order to evaluate the usefulness of the teaching material visit the classes periodically, interview and photograph the students.

The Illinois String Research Project has created nation-wide interest. Project films and workshops have been presented during the ASTA national conventions held in St. Louis

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and Seattle, and presentations have been made in state and regional meetings at the University of Texas, Indiana University, Eastman School of Music, Elon College and Rutgers University. The project is cooperating closely with ASTA, many of its consultants and advisors being in the forefront of the string movement.

Here is what some of the string teachers say about the String Research Project:

Newel H. Long, Professor of Music Education at Indiana University --

> "The films on violin playing impressed me very favorably both as to content and technical excellence. I will be delighted when they are available to show the students in my Instrumental Methods classes. Congratulations on developing the successful, much needed tools to aid the teaching of strings and the teaching of the teachers of the teachers of strings."

Josef Gingold, concert violinist and Professor of Violin at Indiana University --

> "The entire Project is of great value to string teaching. Professor Rolland's approach is based on superior knowledge and a lifetime of experience. I congratulate the Illinois String Research Project for making these films available to schools as well as private teachers. They serve a much needed purpose!"

Mrs. Betty Crossley, Indiana University --

> "I liked the truthfulness and the humor shown in the films of the beginning class of students. This was no put-on act, but showed all the problems inherent in such a group and how to solve them. I particularly enjoyed the short pieces in which Mr. Rolland and Mr. Fletcher collaborated. I do not know if they were a "happening" but they are very much 'in' and a clever way to facilitate the teaching of a particular point of technique in each musical brief."

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Mrs. Charles Funk, private teacher in Bloomington, Illinois --

> "It is my opinion that the Project films are of great value both to the teacher and the student as they clearly show the proper position of both the left and right hands. The demonstration of the use of various teaching techniques is helpful. I am particularly impressed with the many exercises developed to shape the left hand, and with the bowing exercises."

Roman Totenberg, concert violinist and Professor at Boston University --

> "The last films which I have seen this summer are very helpful in clarifying the basic motions in violin playing. They are clear and concise so that even advanced players found them interesting and profitable. I have read the manuals and found them very thorough and helpful for teaching of early stages in violin playing."

Many string players and teachers have asked about the availability of materials. The Project will terminate late in 1970, and all of the developed materials will be submitted to the government with a final report. With approval, channels of distribution will be set up to circulate the films, records and printed texts.

It is expected that ASTA will be cooperating in bringing the important new ideas and materials to the attention of the profession.

Editor's Note: This article was prepared by the staff of the String Research Project at the University of Illinois.

The next issue of *THE SCROLL* will contain an article by Mrs. Farish concerning the Contemporary Music Project, an auxiliary activity complementing the String Project.

FOR PICTURES OF PROJECT STUDENTS,
SEE MIDDLE PAGES OF THIS ISSUE.

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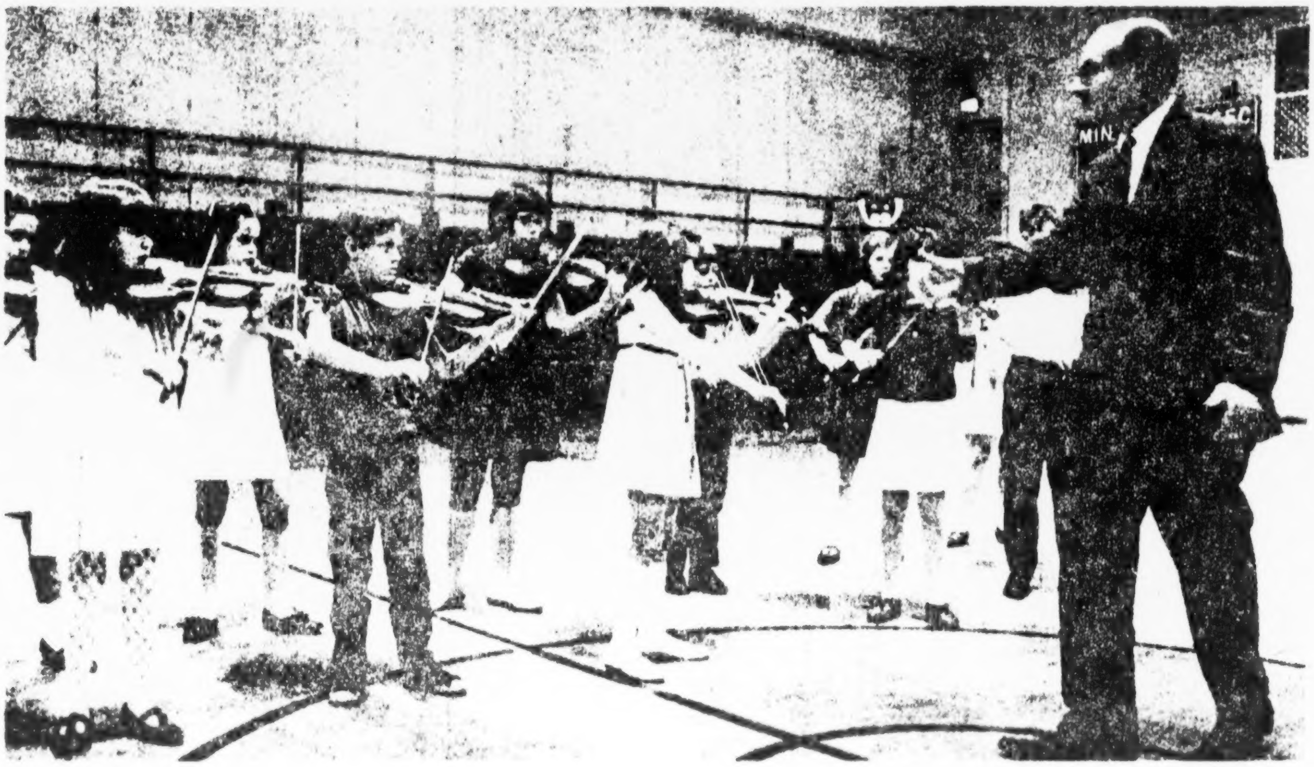

UNIVERSITY OF ILLINOIS STRING RESEARCH PROJECT

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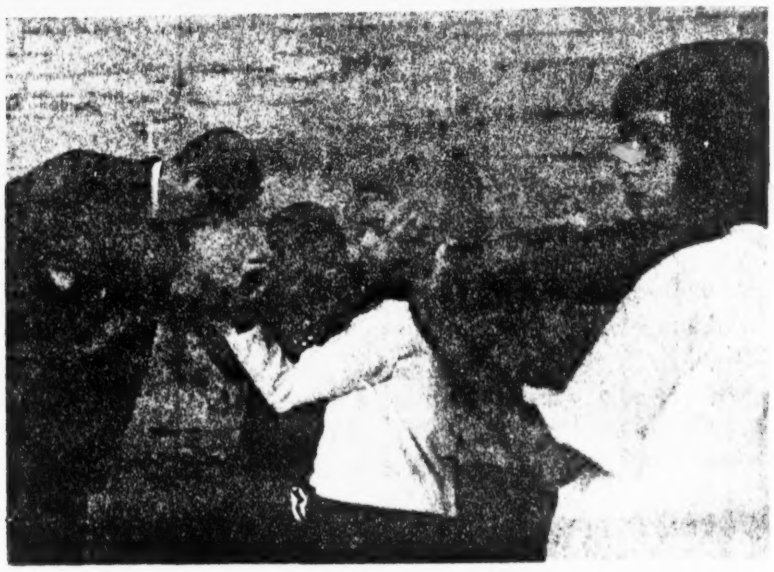

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AMERICAN STRING TEACHER
Vol. XIX, No. 1 (Winter, 1969)

Urbana, Illinois String Research Project

Demonstration in Cincinnati

By Paul Rolland

Teaching this group of young children within the U. of I. String Research Project has been both refreshing and challenging. Now, in their second year of study, the children begin to show realization of the long range project goals: learning to play the violin without excessive tensions and with freedom of movement for the sake of better tone, technique, and musical feeling. Switching back and forth between artist, students, and young beginners with their embryonic, yet king-sized violinistic problems, observing and solving some of their problems, typical to all beginners, has been a highly educational experience.

Hunter Johnson from the Elgin project class shows good form of Lawrence Christiansen, string teacher.

The two project demonstrations at Cincinnati, on Tuesday and Wednesday mornings, March 11 and 12, will offer a report on the U. of I. String Research Project. On Tuesday, the Urbana children will present a program and demonstration. The music presented will be all new, as will the many techniques and teaching ideas to be demonstrated by the children. The Cincinnati program will offer the "how" and the "why" of their development.

On Wednesday, the films and other materials of the research project will be shown and explained. (At the date of this writing, most of the project films have been completed.* These films are regularly presented as part of the teaching program at the various project centers in Illinois.)

As I meet with these children twice a week, it is gratifying to see them play with beautiful postures using long, free bow strokes, and hear them produce a better than usual "beginner's tone."

Prof. Paul Rolland

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They are unafraid to tackle the high positions, to play harmonics, double stops, detache, martele, staccato, spiccato and tremolo bowings, after just a year and a half of class instruction. And above all, they love what they are doing, as their smiling faces testify.

- Remedial Teaching
  Establishing the Violin Hold
  Holding the Violin Bow
  Playing at the Middle of the Bow
  Principles of Left Hand and Finger Action
  Left Hand and Finger Placement in the First Position
  Rhythm Training
  Bouncing the Bow
  Extending the Bow Stroke
  Developing Finger Movement
  Martele and Staccato
  Developing Flexibility
  Early Shifting Studies
  Vibrato
  Sustained Tones and Detache Bowing

The use of upper position from the earlier stages aids to develop good violin positions. The girls are from the Lombard, Ill. project class of Marylyn Sexton.

Some children of the Urbana, Ill. String Research Class in action.

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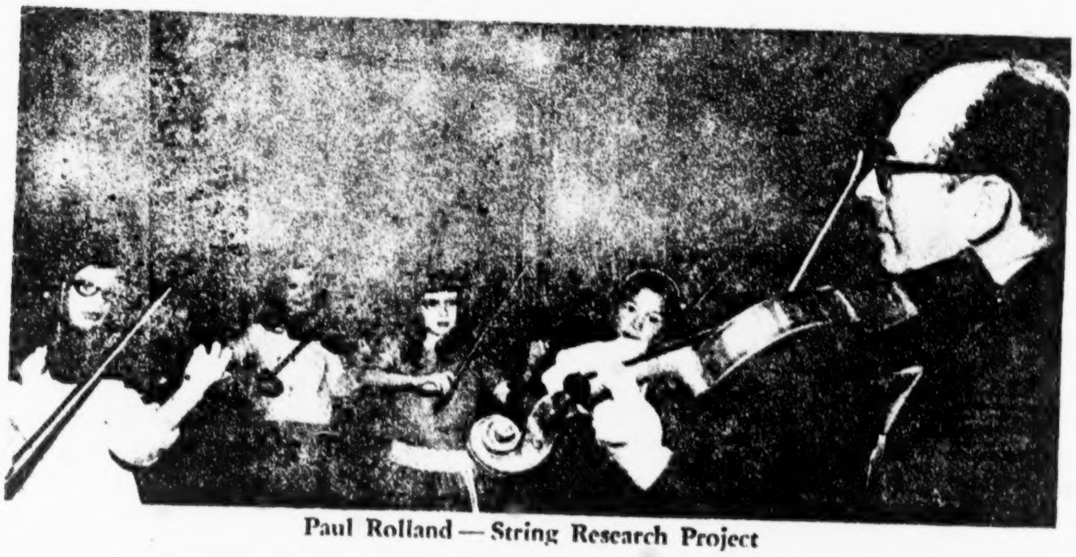
AMERICAN STRING TEACHER
Vol. XIX, No. 2 (Spring, 1969

Cincinnati Convention Highlights

University of Illinois String Research Project By JEAN SHAW SMITH

During two fast-paced and absorbing sessions Paul Rolland demonstrated principles, procedures and results of the University of Illinois String Research Project. Fourteen violinists (ranging from second to fifth graders) who had been trained in the Urbana String Research Class for less than a year and a half time, zipped through their paces like competent pros on a lark. With emphasis on motion and relaxation, the group demonstrated actions which lead to a flexible in-bowing and left hand technique; left hand pizzicato and early shifting as a means to establish good violin positions, was introduced. Shadow bowing occupied the group when one youngster performed alone. A variety of legato, tremolo, sautille, detache, and alternate staccato bowings were performed. Natural harmonics were introduced in all positions, and the elements of teaching vibrato with left hand finger tapping were discussed.

Composer Stanley Fletcher collaborated with Professor Rolland to write a number of tunes to be used as training pieces for this developmental program. These clever pieces were an absolute delight to the youngsters. After playing for more than an hour, Mr. Rolland dismissed his charges who refused to leave until they had played all of their selections with Professor Fletcher at the piano. One of their favorites was a number entitled "Tiddely Dom" inspired by the Winnie The-Pooh poem. In this, riccochet bowing was expertly played. Their most virtuoso work was a brilliant, intricate



Paul Rolland — String Research Project

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showpiece, *Hora* played at progressive speeds.

As another facet of this training program; Professor Rolland has developed film service as well as recordings of these materials which were played with these youngsters. The clarity of the color films enhanced them as an effective tool in the training program. They demonstrated "Principles of the Left Hand and Finger Action," "Extending the Bow Stroke," "Martele and Staccato," and "Early Shifting Studies."

An additional activity of the Project has been developed by Mrs. Margaret K. Farish who explained her Contemporary Music Project as a "Plan for building a contemporary student repertory suitable for the early stages of the instrument (1-3 years.)" For this allied study, Mrs. Farish wrote a "Composer's Guide" to define technical guidelines for preparing the music. Four youngsters from the project played these commissioned works which demonstrated that contemporary music can be appealing, clever, and suitable for beginning level string players. Halsey Steven's "Duet for Two Violins," as well as Alan Shulman's "Theme and Variations for Two Violins," established a definite modern sound in the contemporary idiom with an immediate appeal. William Mullen's "Dynamics," stressed changes in volume while Richard Wernick's canon, "You Can't Catch Me," utilized only open strings with three recurrent phrases of alternating meters played arco, col legno, and pizzicato. All of these pieces were clever and playable. Let's have more of this type of material to 'perk up' our beginning string training programs.

CHAMPAIGN-URBANA NEWS-GAZETTE
March 20, 1969

Music, Film Program Is Sunday

A music and film program with 14 children in the University of Illinois String Research Project class will be given at 2:30 p.m. Sunday in Illini Room A, Illini Union.

The children, all from Urbana, will offer the Urbana premiere of new musical pieces composed by Prof. Stanley Fletcher with the collaboration of Prof. Paul Rolland, director of the String Research Project.

The pieces were performed with much success at the Cincinnati convention of the American String Teachers Assn. and the Music Teachers National Assn. March 11.

Films developed by the project for improving string instruction will be shown after the musical portion of the program.

Participating children are Gwenyth Bailey, Sally Tien, Diane Everly, Louise Brodie, Lynn Stenstrom, Cynthia Healy, Andra Patton, Ward Deal, Douglas Himelick, Susie Lo, David Voightlander, Betty and Frances Yen, and Roberta Yoss.

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ORCHESTRA NEWS
Vol. VIII, No. 2 (March, 1969)

INNOVATIONS IN STRING TEACHING

PAUL ROLLAND

Professor of Music of the School of Music, University of Illinois, Urbana; and Director of the String Research Project

THE UNIVERSITY OF ILLINOIS String Research Project, funded by the Arts and Humanities Branch of the Office of Education, will demonstrate some of its products and approaches during the national convention of ASTA and MTNA, March 11 and 12 at Cincinnati, Ohio. The primary purpose of the project is to develop materials for the teaching of good motion patterns and to free the string student of excessive tension. To achieve this goal, short films have been produced on selected topics, presenting in an organized system the various techniques that the beginner violinist must accomplish during the (approximately) first two years of study.

The films and their accompanying manuals offer a detailed explanation and demonstration of basic techniques and of their teaching. While the current series is for violin only, the principles are valid for the other string instruments. It is hoped that after completion of the current project, classroom films will be produced for the cello and string-bass.

The University of Illinois research films won the acclaim of music educators who previewed them. Here are their appraisals:

Professor Josef Gingold, Indiana University: "The entire project is of great value to string teaching. Professor Rolland's approach is based on superior knowledge and a lifetime of experience. I congratulate the

Rhythmic movement is incorporated in the instruction. The children step, clap, tap, and pluck on the rhythm or on the pulse of the tunes. A few minutes of such games have a stimulating effect during class periods, and as shown here, also on the parents.

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Illinois String Research Project for making these films available to schools as well as private teachers. They serve a much needed purpose!"

Mr. Morris Collier, string teacher in the Lincoln, Nebraska public schools: "The films are wonderful! They show an imaginative and creative approach that really gets to the root of a problem and vividly shows the solution to problems."

Mrs. Betty Crosy of Western Illinois University: These excellent films were true-to-life string situations using students as models. The informal campus-background shots would help the remedial student to identify with the student who had similar problems."

Roman Totenberg, concert violinist and Professor at Boston University: "The films which I have seen this summer are very helpful in clarifying the basic motions in violin playing. They are clear and concise so that even advanced players found them interesting and profitable."

Professor Newell Long of Indiana University: "The films on violin playing impressed me very favorably both as to content and technical excellence. I will be delighted when they are available to show the students in my Instrumental Methods classes. The films are compact and free from excess footage found in so many educational films. The photography zooms in nicely on the instructional problems and the narration is equally lucid and pertinent."

The film topics include: "Remedial Teaching"; "Establishing the Violin Hold"! "Learning to Hold the Bow"; and "Extending the Bow Stroke". Other films in the final stages of editing are: "Developing Finger Movement"; "Martele and Staccato"; "Developing Flexibility"; "Basic Shifting Studies"; "Developing Flexibility"; "Vibrato Teaching"; "Sustained Strokes; and "Detached Bowing".

In twenty Illinois project centers, string teachers use these films as models in their first and second year project classes. They report success in showing and applying the filmed techniques to their pupils.

It is hoped that the films will be released to the profession shortly after the conclusion of the current project, late in 1969. Repertoire and technique records are also developed by the project to supplement existing repertoire.

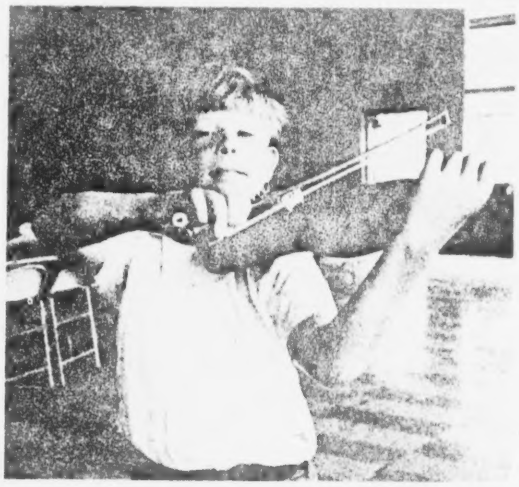
A series of contemporary pieces have been commissioned under a supplementary grant. Mrs. Margaret Farish has directed this project and has gained the cooperation of outstanding composers.

A number of nationally known educators and artist teachers have given their advice to the project as consultants: Ivan Galamian, Marjorie Keller, Robert Klotman, Jack Pernecky, Marvin Rabin, Roman Totenberg, and Howard Van Sickle. ■

▲

Hunter Johnson shows excellent form! His wrist and arm alignment is perfect. The arrows represent the "Rock the Bow" and "Roll the Bow" exercise played at the frog. By "Rocking", excess tension in the hand muscles can be relieved. The string helps to support the bow. "Rolling" relieves tension in the shoulder joint. A good principle: If something is stiff, move it!

The bow hold must be flexible, yet firm! Flexible enough to be able to draw straight and smooth strokes; firm enough to allow precise articulation of tones and to lift or move the bow instantly. When lifting the bow, the fingers must remain curved. ▼



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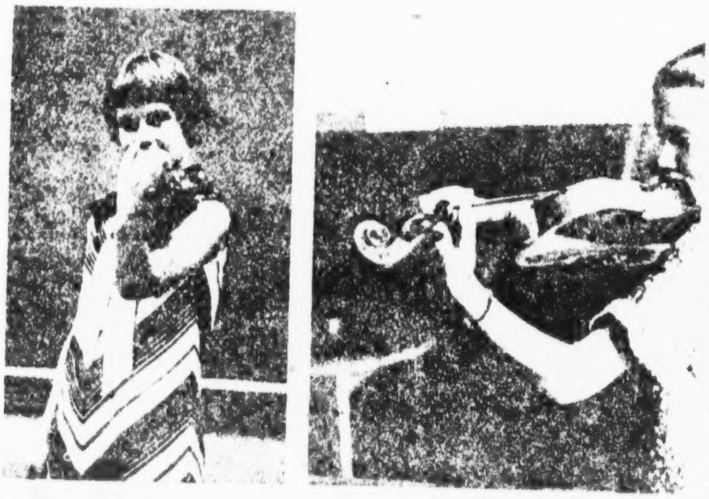
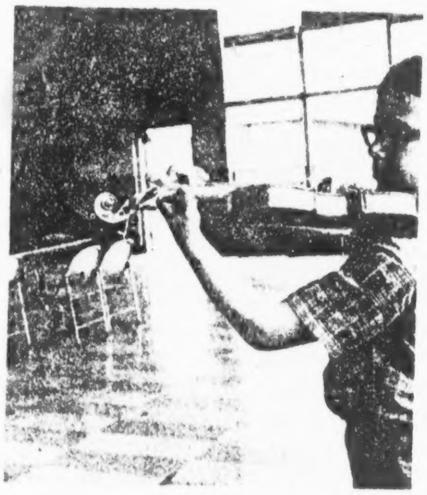


The project classes' progress is evaluated during regularly scheduled visits. The children are asked to demonstrate specific motions or forms without help from the teacher. These interested first year pupils know right from wrong!

Angle of fingers, level of hand on finger board must be correct. Wrist must not collapse. Forearm must be straight. Thumb should be flexible (tap it). First finger's nail must be turned toward face, and fingers lean toward scroll and G string — not toward bridge.

Left hand form and flexibility is developed by the intensive use of left hand pizzicato, and by introducing shifting and simulated vibrato movements at an early stage. These girls have good positions, are relaxed, and play with confidence in this unposed action shot, taken after eight months of study. The typical project class meets twice a week for a half hour.

▼



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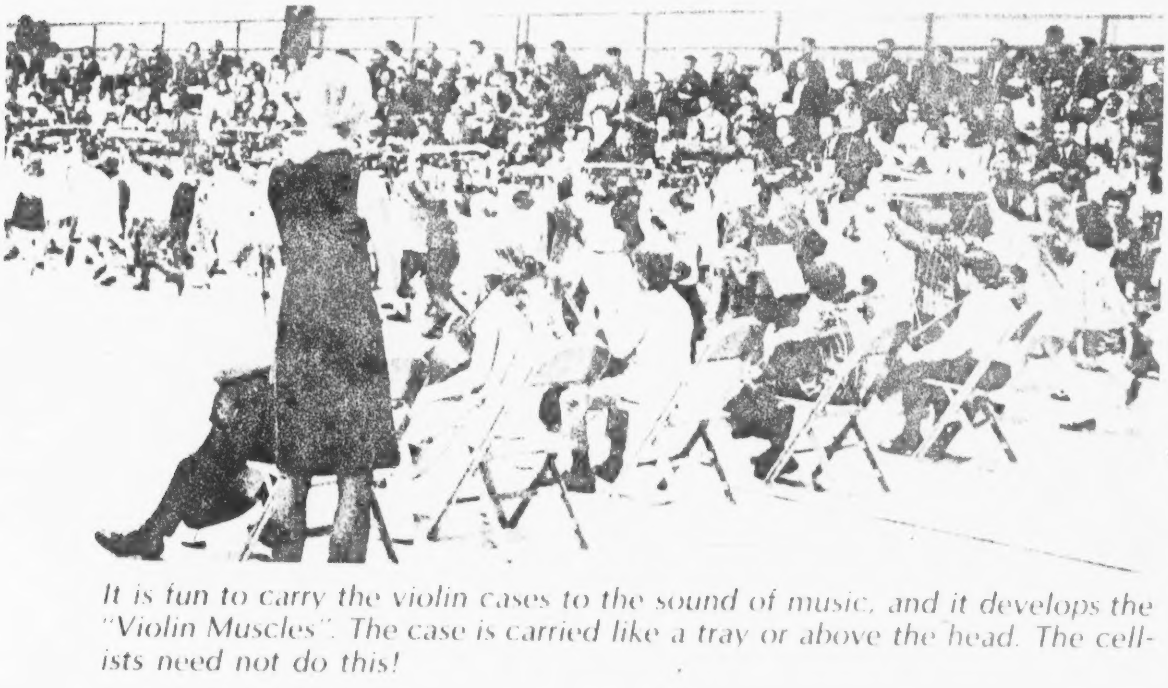
Suzie Lo in the foreground (a student for nine months) inadvertently reverts to the "Early Bow-Hold". The children are taught to hold the bow a few inches above the bow at first, in order to lessen tension caused by a stiff bow grip. This is an optional feature of the Project and seems to help most of the children to develop good bowing. After a few weeks, or months — depending on individual skill and strength — the regular bow-hold is established. Now in her second year, Suzie has a remarkably beautiful and flexible bow arm, and holds the bow in the regular manner.



It is fun to carry the violin cases to the sound of music, and it develops the "Violin Muscles". The case is carried like a tray or above the head. The cellists need not do this!

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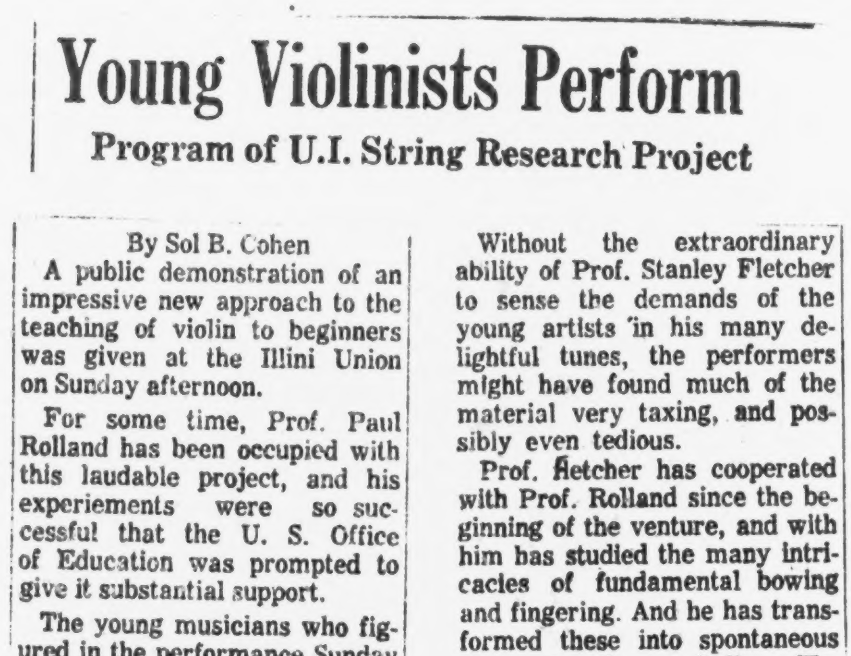
CHAMPAIGN-URBANA COURIER
March 25, 1969



Young Violinists Perform

Program of U.I. String Research Project

By Sol B. Cohen

A public demonstration of an impressive new approach to the teaching of violin to beginners was given at the Illini Union on Sunday afternoon.

For some time, Prof. Paul Rolland has been occupied with this laudable project, and his experiements were so successful that the U. S. Office of Education was prompted to give it substantial support.

The young musicians who figured in the performance Sunday were all from elementary schools, and they have been under the guidance of Prof. Rolland and his associates for about a year and a half—some of them for an even shorter period. The teaching has been done after school hours, and it is to the credit of the parents and the dedicated youngsters that so much extra-curricular time should have been given to the waning art of violin playing.

The influence of Shinichi Suzuki of Japan, who has become internationally known for his research in this field was in evidence throughout the afternoon's program. But it is certain that Prof. Rolland, an accomplished violinist and pedagogue, has introduced many new features, especially adapted to the needs of the American child. The results have amounted to practically an origial solution of many technical problems.

Without the extraordinary ability of Prof. Stanley Fletcher to sense the demands of the young artists in his many delightful tunes, the performers might have found much of the material very taxing, and possibly even tedious.

Prof. Fletcher has cooperated with Prof. Rolland since the beginning of the venture, and with him has studied the many intricacies of fundamental bowing and fingering. And he has transformed these into spontaneous and attractive melodies. The young players seemed to be havhaving a wonderful time with these tunes, and occasionally there was an accentuation of rhythm in bodily movement and the stamping of youthful feet. Everyone involved seemed to be having fun!

A group of numbers by contemporary composers, commissioned by the String Research Project, was performed by a quartet of players, and these intricate works seemed to offer them no problems. A film demonstrating the application of Prof. Rolland's theories of the fundamentals of string teaching was an added feature.

It is evident that a fresh and greatly needed approach to the many problems of "beginning strings" has been successfully launched in our community, and its effects are already being felt throughout the schools of the nation.

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CHAMPAIGN-URBANA COURIER
April 2, 1969

Mail Bag

Young Musicians Lauded

Prof. Rolland's Methods Original

To the Editor:

Sir: A few comments are in order concerning the outstanding program and demonstration of the University of Illinois String Research Project on March 23 at the Illini Union, and its subsequent gratifying review by Mr. Sol B. Cohen in the Courier, March 25 issue.

The remarkable playing of the 14 Urbana children, only after a year and a half of study, shows the soundness of the principles and teaching approach to the project. The children not only played better in tune and with a better tone than other groups of such brief background heard before, but also demonstrated techniques not usually accomplished until after several years of instruction. The same techniques have been introduced with good results by the fine Champaign teachers, Gerald Slavich and Edward Wilcox, and by other teachers in 15 other project centers in Illinois.

It should be stated, in all fairness to Prof. Paul Rolland, initiator and director of the project, that this is not a "Suzuki Program," the type of which now mushrooms all over the country with dubious results. Suzuki has attained excellent results in Japan by teaching very young children with the aid of their mothers. When his program is imitated in a watered-down version, with older children, without parental assistance and without private instruction, the results are nothing like those attained in Japan. private, not class, lessons as Suzuki and his associates teach so many people erroneously believe. His group demonstrations are merely for recreation and programming, not for instruction, the latter being always private between teacher, pupil and parent. Many of the distorted Suzuki programs fail to develop children with good playing habits, and almost certainly fail to teach them to read music, a skill essential to musical requirements in America. The University of Illinois String Research Project is based on the ideas and teaching principles of Prof. Rolland, and on his experience of teaching children in Iowa, and locally at the Illinois Summer Youth Music Program for almost three decades.

The project has developed films, recordings, music and visual aids for the teaching of beginning string players. Like the Suzuki program, it provides records to aid children in their homework, but there the similarity stops. The main goal of the project is to show how to develop players with refined motion techniques, free of excessive tension. These are the elements which lead to the habit of playing with beautiful tone and good technique.

Those who have heard and seen the demonstration of the 14 Urbana children on March 23 and earlier in Cincinnati, witnessed the realization of the project goals. The essentials of the University of Illinois String Research Project are original and not Japanese imports.

KARRELL JOHNSON
Urbana

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CHICAGO TRIBUNE
July 3, 1969

WILLMETTE MUSIC CLINIC

String Instrument Project Praised

A string instrument research project by a University of Illinois professor won the support of local critics at a recent music clinic in Wilmette.

Paul Rolland, director of the University of Illinois String Research project, presented 100 violin students from the Chicago and Champaign-Urbana areas who have been instructed according to his techniques during the last two years.

The primary purpose of the project, funded by the arts and humanities branch of the federal office of education, is development of good motion patterns to relax the beginning musician and improve his playing.

"This is a great project and the results were amazing," said Victor Aitay, Chicago Symphony concertmaster and one of the critics at the recent performance in St. Francis Xavier school, Wilmette.

Give Rave Reviews

"The children really played excellently," he said. "The relaxation was obvious and definitely improved their position and playing."

Aitay said he recommended to several of his students that they take up the project and "the results were enormous."

Other critics of the project included: Shepherd Lehnhof, viola, Chicago Symphony; George Perlman, violin instructor, Chicago Fine Arts building; Dr. Marvin Rabin, University of Wisconsin; and Robert Shamo, Lombard, and Stanley Nosal, Kenosha, Wis., directors of instrumental music for city public schools.

The children who performed for the clinic were among string students from 20 schools across the state participating in the program. The fourth, fifth, and sixth graders played along with recorded accompaniment developed especially for the program.

Calls Plan Revolutionary

Each class performed for the critics and then the entire group played under Rolland's direction.

"I believe Rolland is doing something of a revolutionary nature," said Perlman. "His students are far ahead of any other first or second-year students in the freedom of their bowing and in their intonation."

He called Rolland's methods the first "specifically American contribution to the business of violin pedagogy."

Perlman described the methods of a Japanese instructor, Suzuki, that achieved "phenom-

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'enal success' in Japan by involving the mother in every lesson and practice session.

"Suzuki's methods failed here because American children are not as adaptable to the influence of their parents," he said. "'Paul Rolland's methods are the coming thing; I am convinced of it."

20 Instructors Instructed

Twenty Illinois string instructors, 10 of them from the Chicago area, received instruction from Rolland during summer workshops in 1967 and 1968 at the University of Illinois, Champaign - Urbana. He explained his techniques and demonstrated them with local school children.

Using specially-prepared charts, records, and films, the teachers used Rolland's methods with their own beginning students.

Rhythmic movement is a vital element in Rolland's teaching. The children step, clap, and tap their feet to find the rhythm of the tunes. They also carry their violin cases to the sound of music to develop "violin muscles." The cases are carried above their heads as the children move with the music.

The goal of each exercise is to "free" the pupil from the static, tense traditional violin position.

Eliminates Stiffness

Short films, using beginning students in the Champaign-Urbana schools, illustrate each technique and phase of instruction. The topics include "Remedial Teaching;" "Establishing the Violin Hold;" "Learning to Hold the Bow;" and "Extending the Bow Stroke."

Two principles emphasized by Rolland are flexibility and mobility: "If something is stiff — move it."

"The child must be able to relax and enjoy the music and playing," he said. "A child's position can be perfect and he still may not be able to play."

Perlman credited the compositions used in instructing the children with much of the success of the project.

"They have a good time because they feel as tho they are playing a concerto," he said. "They are actually playing a primitive piece of music."

Perlman also was impressed with how much the children enjoyed playing because of the accompanying swaying and foot movement.

Emotional Response

"Their emotional response to the music is unequalled," he said. "All you have to do is look at their faces to know they are enjoying themselves."

Rolland said the project, which was to have ended next month has received additional federal funding to extend the study to Feb. 1, 1970. The extra time will be used in writing reports and producing more films and compositions.

The materials, including the evaluation from the Wilmette clinic, will be reviewed by the office of education and distributed under the authority of that office.

"I have had many requests for our manuals and films," Rolland said. "They are part of the public domain and hopefully will be distributed to the profession early next year."

Schools are Listed

Rolland, professor of music at the University of Illinois for more than 20 years, said he hoped the results of the project would result in a "shot in the arm" for the field of string instruction.

He said altho the current series is for violin only, the principles are valid for other string instruments.

Project classes represented in the Wilmette clinic included:

Blanche Bord school, Morton Grove; Jack Long Junior High, Wheeling; Wilmot Junior High, Deerfield; Champlin school and Nativity school, Chicago; Highland Hills school, Lombard; Jackson school, Elmhurst; Kimball Junior High, Elgin; and Lincolnwood school, Lincolnwood.

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(TRIBUNE Staff Photo by Art Walker)

FULL-FLAVORED FRIENDSHIP—Illustrating the easy familiarity that String Research project students enjoy with their instruments is Susan Bulzoni, 9, a fourth-grade student at South Park Elementary school, Deerfield. Susan participated in one of 20 string instrument classes across the state that for two years taught beginning students according to methods developed by Paul Rolland, University of Illinois music professor. Results of the project, funded by the United States office of education, should be available early next year.

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CHAMPAIGN-URBANA NEWS-GAZETTE
July 13, 1969

30 Rolland Students To Demonstrate

Prof. Paul Rolland, director of the University of Illinois String Research project, will take 30 of his Champaign-Urbana area students to Bloomington, Ind., July 19 for a demonstration of his revolutionary teaching techniques.

In addition to the demonstrations, Rolland will present films and lectures dealing with string instruction..

The primary purpose of the project, funded by the arts and humanities branch of the federal office of education, is development of good motion patterns to relax the beginning musician and improve his playing.

A similar demonstration by Rolland's students at a recent music clinic in Wilmette brought rave revues from Chicago area critics.

'Far Ahead'

George Perlman, violin instructor, Chicago Fine Arts building, said, "I believe Rolland is doing something of a revolutionary nature. His students are far ahead of any other first or second-year students in the freedom of their bowing and in their intonation."

He called Rolland's methods the first "specifically American contribution to the business of violin pedagogy."

Rhythmic movement is a vital element in Rolland's teaching. The children step, clap, and tap their feet to find the rhythm of the tunes. They also carry their violin cases to the sound of music to develop "violin muscles." The cases are carried above their heads as the children move with the music.

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"The child must be able to relax and enjoy the music and playing," he said. "A child's position can be perfect and he still may not be able to play."

Rolland said the project, which was to have ended next month, has received additonal federal funding to extend the study to Feb. 1, 1970. The extra time will be used in writing reports and producing films and compositions.

Rolland, a UI professor for 20 years, said he hoped the results of the project would result in a "shot in the arm" for the field of string instruction.

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DEMONSTRATES 'REVOLUTIONARY' TECHNIQUE. Prof. Paul Rolland of the University of Illinois demonstrates his revolutionary techniques in teaching the violin to a group of Champaign - Urbana area students. At a recent music clinic in Wilmette, Chicago area critics acclaimed his work and called it the first American contribution to violin pedagogy. He will appear in Bloomington, Ind., on July 19.

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AMERICAN STRING TEACHER
Vol. XIX, No. 3 (Summer, 1969)

"PIED PIPER" OF URBANA

by Ishaq Arazi

"Paul Rolland would put millions of Violins into orbit."

The "Pied Piper" with a share of his millions.

We had not been oblivious of the name of Paul Rolland in the world of strings. We had read his articles, had read much about him and his work, and, during the immediate past few years had been quite interested in following his travels about the world, which were sponsored by the Government for the express purpose of getting a close up and expert opinion on the teaching procedures, techniques, and progress in other countries. Actually we had amassed quite a portfolio of information on and about the man himself with an idea of maybe writing some sort of a profile on him.

Paul Rolland had been one of the founders of the American String Teachers Association some one quarter of a century ago which had been formed for the express purpose and necessity of solidifying the position of all the strings against the tremendous inroads that non-string instruments were making in the curricula of schools and in general music. ASTA made possible a centralization of common effort in the pedagogic field and in the ensuing years has solidified and strengthened its position. In 1950, Mr. Rolland also founded the ASTA Journal, which has served as the strong right arm of the organization, and held the post of of its editor for ten years.

Mr. Rolland has been in the pedagogic field for almost thirty years, having started with colleges in Iowa before coming to Illinois some twenty five years ago. Teaching has been the prime interest in his career. Having himself gone through the very thorough training of the Hungarian Franz Liszt Academy in Budapest under the aegis of Imre Waldbauer, he was eminently qualified for the task, and, in the ensuing years, had amassed quite a backlog of experience in various teaching enterprises. As an expert observer of the string scene in general, and with the added exposure to the main-stream of pedagogy through his affiliation with ASTA and its members, he had many

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Position is everything in life.

thoughts about the teaching conditions and procedures in the schools:

"It is a fallacy to believe that the careful teaching of fundamentals will slow down the pupil . . . on the contrary, a better tone production, ease of playing permits them to progress much faster . . . good motion patterns are also the key to good rhythmic response . . . a thorough indoctrination into this area will find that the pupil's rhythmic ability is greatly improved and that such typical faults as rushing, omitting rests, shortening the value of notes becomes by and large absent . . . they can be trained to feel the pulse and express it in motion . . . we also can find that most of the elements of string playing can be introduced, in embryonic form of course, during the first year of instruction, and refined thereafter . . . the variety of materials that can be introduced is quite a challenge and in itself quite a morale builder . . . one would be quite surprised at what pupils can be started on during the first and second years."

Paul Rolland had many thoughts and ideas about teaching during all of these years and eventually it came to the point when all of this should be amassed and refined and polished and then given to the world to be used. But how and by whom? This would be a full time project and should have a large staff to bring it about. Why not the Government to act as sponsor? True this was not an urgent scientific or medical undertaking but to Paul Rolland it was of paramount importance. So an application was initiated to the Department of Education and, mirabile dictu, it was not turned down. In fact, quite a bit of interest was evinced, and after a period of investigation and the weighing of all the pros and cons was completed, the project was given a three year grant to proceed.

It was to be known as the University of Illinois String Research Project and Paul Rolland was to be in charge of all phases of operation. From his associates and affiliations with ASTA, he dug deep and came up with a staff that is sometimes dreamed about and hoped for but is seldom realized. His main chain of consultants consisted of Ivan Galamian, Roman Totenberg, Marvin Rabin, Robert Klotman, and Howard Van Sickle. Experimental Project Teaching Groups were to be conducted in the local public schools of Urbana and Champaign, and in some twenty centers in Illinois, and after one year was spent in formulating the Project CREDO and readying the teaching materials, the wheels started to turn. Incidentally, the current phase of the Urbana Project as it had come to be known will terminate early in 1970.

"I am most anxious that this project not end as a theoretical undertaking and be put on a shelf for reference . . . this should be made available, activated, and put to the test all over the country . . . there are films, manuals, recordings, video tapes, plus an impressive repertoire for the beginning phases of instructions . . . the field of string playing and teaching needs all the push it can get . . ."

We were quite disappointed at not being able to attend the 1969 ASTA Convention in Cincinnati, and even more so, when we learned that Mr. Rolland had brought along one of his crack units to put on a demonstration concert for the assembled delegates. Reports from those who attended were very voluble in enthusiasm, and this only served to whet our appetites more and more, so, we were quite happy when an invitation was ex-

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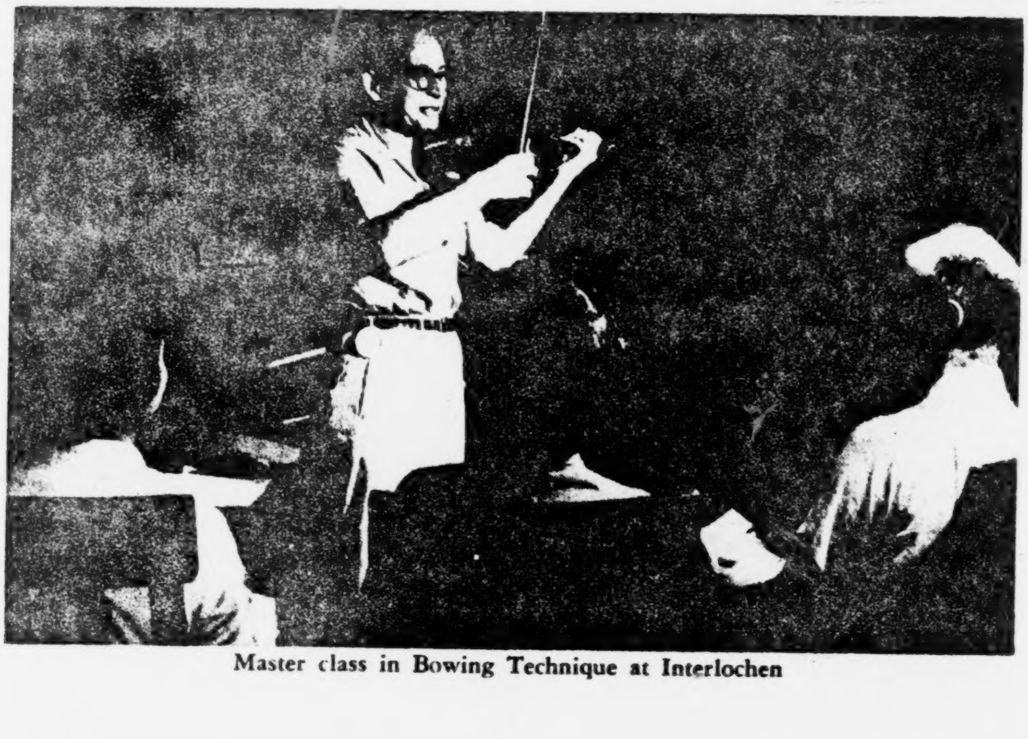
with Stravinsky

and we all absorbed and reaped great rewards in this field from them . . . in these classes too I started to play the viola which stood me in good stead later . . . when I left the Academy I joined the Budapest Symphony first as violinist, then solo violist . . . along with several colleagues from the orchestra, notably Michael Kuttner, Nicholas Harsanyi, Geoarge Barati and myself as violist, we formed the Pro Ideale Quartet . . . and after a period of preparation, we started to concertize . . . not extensively, mind you, but enough to give us exposure and even to attract the attention of a New York critic Herbert Peyser who gave a rave review which had helped us to try to get to America to seek our fortunes there . . . this was in the very late (1938) thirties and we eventually arrived in the United States and located in the Westminster School as a resident quartet . . . this was made possible by the efforts of Feri Roth, a fellow countryman who had his own quartet . . . our existence as a quartet fizzled out for a number of reasons . . . maybe it was psychological . . . our artistic honeymoon was over . . . we were faced with the rigors of living and playing together which resulted in a clash of personalities . . . This coupled with economic problems forced us to disband . . . However we had had our moments of glory . . . I even joined the Lener Quartet for a short while . . . then I was forced to make a decision as to the direction I should head in . . . I veered into the direction of teaching and education and this is where I still find myself . . . prior to settling in Illinois I was with the Simpson College in Indianola, Iowa and with the State University of Iowa at Iowa City . . . then I came to Urbana, Illinois where I have been for almost a quarter of a century . . . I have been chairman of the string department since 1945 until September of 1968 at which time owing to the pressures of my schedule I relinquished the administrative duties of the chairmanship . . . although I have spent most of my life in pedagogy I have always managed to keep up with performance . . . After I had left Iowa City, I was instrumental in getting Waldbauer to leave Hungary and go there as Violin Professor . . . he spent almost five years there until his untimely death and I used to see him occasionally . . . you know speaking of him reminds me of another aspect of teaching . . . students thrive on some form of praise regardless of the amount . . . just a gram at the right time can do wonders . . . one of Waldbauer's hangups was that he was one of those who found it difficult to do this while his student . . . he once assigned me a project to work out: a seven years curriculum for violin students . . . I worked very hard on this and after I handed it over to him for examination, he seemed surprised but his only



Master class in Bowing Technique at Interlochen

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DIAL TEACHING, RHYTHM TRAINING et al. Viewing these films only served to strengthen the validity of the Oriental proverb that states "One picture is worth more than a thousand or so words." At the discretion of the teacher, the films can be used in many ways.

One of the big stumbling blocks of an approach such as this is the music to be used. Mr. Rolland called upon a colleague, Professor Stanley Fletcher of the Music School staff, wrote out the prescription for the music needed and Professor Fletcher sat down and filled it. The project is quite all encompassing and could very well take care of the central portion of Leopold Auer's dictum "Talent, pedagogic supervision, and intensive application go hand in hand to span the heights." Perhaps in times to come, we might run into a self propelled bow, or strings with built in amplification, but until such time arrives, the Illinois String Research Project could well be the sine qua non.

"About myself, I am from Hungary . . . I was brought up in a matriarchy, it seems . . . my father died when I was six and most of my relatives were women . . . I had one lone uncle whom I was quite fond of and who played the violin, but as he lived a ways off, we never saw too much of him . . . he was responsible for bringing me a very small violin which I tinkered with . . . I was interested in the sounds that would come out of it . . . I was quite a mimic with it and once after my uncle had played a Mozart sonata at our home, I went through all of his motions myself with an accompaniment no less . . . all the relatives present in an effort to encourage me more and more gave me a thunderous ovation, which I believed and accepted . . . and my uncle helped compound this doing by telling me the secret of my wonderful playing was in a dish made of barley which I didn't particularly care for but which we had had for dinner . . . I believed this too and for a long time afterwards I asked for barley in any form . . . I got to know the violin quite intimately . . . I made sounds on it . . . I played it like a guitar . . . I even used it as a bank . . . and once perhaps owing to my mechanical interest, when some coins would not come out easily, I widened the F holes to accommodate them . . . actually, I didn't start formal study until I was past ten . . . I went through a succession of teachers without finding myself . . . all I knew was they were not contributing to my advancement . . . however, I was not discouraged as much as frustrated . . . after three or more teachers or so I began to become conscious of a teacher named Rados whose pupils seemed to be a cut or more above the average . . . somehow I finally ended up in his classes and he leveled and straightened me out enough that I was accepted into the domain of Imre Waldbauer . . . this man was like a giant smith and his studio was a hot forge where he hammered and shaped his pupils into artists . . . you know, I have always thought of the art of violin playing as a collection of positives and negatives . . . we strive constantly to eliminate the negatives and to add to the positives . . . Waldbauer was supreme at this type of teaching . . . As I said his studio was like a hot forge . . . if you couldn't stand the heat, it was no place for you . . . he was a great remedial teacher and I was constantly amazed at the number of concertmasters and concert artists who were constantly coming back to him for cures for their own problems . . most of my studies took place at the Franz Liszt Academy at Budapest . . . besides the violin, we also studied intensively chamber music under Leo Weiner . . . Both Waldbauer and Weiner were magnificent string quartet coaches

Early photo of Clara and Paul

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understand first of all that all of these students had been started from scratch and had had only about eighteen months of instruction. As we stated before, we were not prepared to see and hear what we did. First of all, all of the kids played with a classical form. The stance, the holding of the instrument, the placement of the left hand, the holding and drawing of the bow, the use of a generous vibrato added to a magnificent tone production all struck home with force at one and the same time. The morceaux played bore such fanciful titles as "Chinese Flute," "Birds at Sunrise," "Banjo Tune," "Dancing Butterflies," "Fiddlers Blues," "Spirit Bugler and Distant Fife and Drum," etc., etc., etc., featuring such items as harmonics in altissima, many forms of bow articulation, detache in variato, arpeggios, chromatics, string crossings, tremolos, sul ponticello and sul tasto, sautille, and many other techniques that go into the playing of the violin.

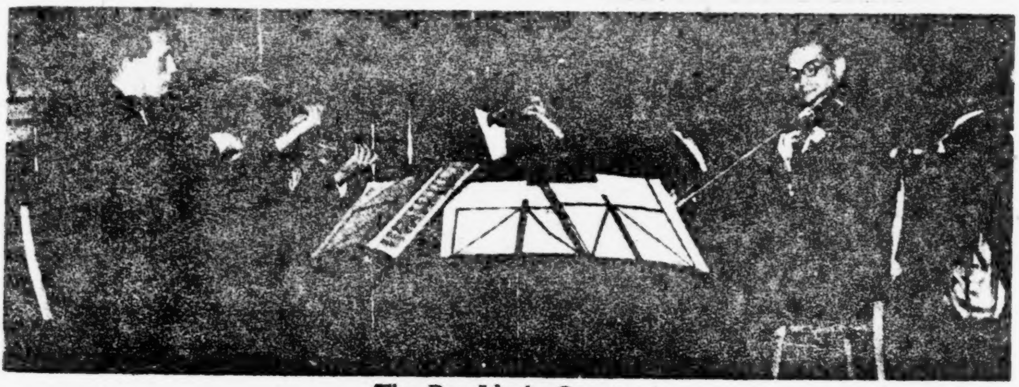
The playing was characterized by a sense of involvement by all concerned and done with much elan and spirit. The faces of the players reflected this and more. They played with an ease and freedom that many older persons could well envy. True, this was not Paganini or Tschaikovsky, but with this superb stylistic start, who would doubt that this would only be a matter of time?

The second part of the program was devoted to three short films viz., EXTENDING THE BOW STROKE, MARTELE AND STACCATO, and EARLY SHIFTING, and ended with a series of contemporary tunes especially commissioned by the project from a group of leading composers. For a grand finale, the group blazed its way through a spirited Hora complete with shouts and foot stampings. This brought the house down and was repeated as the one encore.

The entire program was very enthusiastically received and after everyone had left, we went with Mr. Rolland back to the Music Building for some more movies, about a dozen or more. Although this may seem like a lot of moviegoing, actually it was quite interesting. The films were timed to last from 6-8 minutes and were filmed, edited, and cut to maintain the maximum interest. The films were made to match and go hand in hand with the manuals, and consisted of demonstration of specific actions which were explained on the sound track by a narrator. We were struck particularly by the numerous close up views of the hands and arms. Mr. Rolland played a large part in the making of these films as a writer, producer, director, and also played a part as a violin teacher. He and his colleagues also did some playing demonstrations.

Three outstanding concert violinists were also presented on film, viz., Leonard Sorkin of the Fine Arts Quartet, Robert Gerle, the noted Hungarian virtuoso, and Endre Granat from the University Faculty. Mr. Rolland explained that these artists were picked because they represented extremely opposite types of left hand and left thumb usage.

The films bore such titles, to quote a few as ESTABLISHING THE HOLD, LEARNING TO HOLD THE BOW, PLAYING IN THE MIDDLE WITH SHORT BOWS, MARTELE AND STACCATO, EXTENDING THE BOW STROKE, BOUNCING THE BOW, PRINCIPLES OF LEFT HAND AND FINGER ACTION, DEVELOPING FLEXIBILIITY, BASIC SHIFTING MOVEMENTS, DEVELOPING FINGER ACTION, DEVELOPING FLEXIBILITY, BASIC SHIFTING MOVEMENTS, DEVELOPING FINGER MOVEMENT, ESTABLISHING LEFT HAND AND FINGER PLACEMENT IN THE FIRST POSITION, REME-



The Pro Ideale Quartet

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tended us by Mr. Rolland to come to Urbana and see the same concert put on by the group that had played in Cincinnati, in their own back yard.

We arrived at Urbana Sunday morning and were met at the airport by Mr. Rolland himself. We got acquainted on the trip to town and talked mainly about the String Project. We went directly to his studio in the "String Annex" of the School of Music which also houses the main office for the Project. This latter was a fairly good sized room which was dwarfed by its contents. Every conceivable flat surface was covered with manuals, papers, books, etc. One side of the room had a special rack that was crammed with cans of film. The cupboards and filing cabinets were jammed to capacity inside, and on the tops of these were all sorts of containers of records, tapes, etc. Two film projectors plus four screens took up some space also. Two or three cameras were also in evidence and any number of tape recorders. Mr. Rolland had been quite active as photographer for the Project and hundreds of photos all over the walls attested to this. We also found out that Mr. Rolland, busy as he is, tapes everything for future reference and digestion whether it be a discussion, a performance by a student, or even a rehearsal for violin and piano by himself and his sonata partner, Howard Karp for a future program. It was now about noon and we too began to be involved in the preparations for the afternoon concerts. We just could not stand by and let him do all the hauling around of all the necessary props. Students and associates too had begun to show up and soon everything needed had been moved and installed in a large room at the Illini Union. We had a sandwich and he left to change clothes for the program.

The hall was packed with parents, relatives, friends, and just people interested in the program when we arrived later. There was a large raised platform at one end in the center, flanked by a grand piano and a motion picture screen.

Looking around further, we finally spotted the fiddlers. They were about fourteen in number and about as heterogeneous a conglomeration of likeable imps that could be imagined. They were chewing gum, blowing bubbles, making faces at each other, chattering like magpies and engaging in other normal activities of kids. Not an artistic nerve was in evidence. Pretty soon Mr. Rolland got them together and started supervising the tuning of the instruments which the kids did themselves. They seemed to know what they were doing in a minimum of time and the open strings had a nice resonance.

Programs had been passed out at the door and the numbers were listed in order. The pianist was Professor Stanley Fletcher of the University Faculty, who did the bulk of the composing and arranging of the music played.

The program finally got under way with a few preliminary remarks by Mr. Rolland who also announced each number. Prior to this we had made a few mental preparations for what we might hear but we were quite totally unprepared for what emerged. One must

Oops! He missed!

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comment was that it wasn't quite right . . . very vague it seemed then . . . however, after he had been in America a while he asked me for some cooperation in helping to establish a curriculum for his classes at Iowa . . . in one of our discussions he pulled out the curriculum assignment made in Budapest . . . he had brought it with him and reminded me what he had said then to me . . . he had never forgotten it and was trying to make a belated apology . . . I had long forgotten about it but he brought it along and gave it back to me . . . while we're speaking of Budapest and the old days, let me add a few other thoughts about teaching . . . one of the weaknesses of our string teaching in America is that our teaching training instructions do not provide enough of the master class type of teaching very common in Europe. I seldom took a lesson by myself and always seemed to be hearing others being taught either before or after my lessons . . . the opportunity to observe a good teacher in action is what helps one to become a good teacher . . . this can not be done in the short time of our typical college curricula which provides "practice teaching" for a half semester in the senior year . . . in the old country we did this for a full year after being indoctrinated in a string pedagogy course during the preceding year . . . and after years of informal observation of our own teacher."

We were crossing the campus, talking as usual, when he decided to stop in the concert hall for a moment to pick up something he would need later on. As we opened one of the side doors, we heard the sound of a violin. It was one of his students getting ready for recital later on in the month. She was playing Bach.

It sounded quite good but slightly out of focus . . . she was playing the Chaconne and was having a little bow coordination problem in the Grand Arpeggio passage . . . she tried again and again with no apparent success.

She had stopped playing and was sitting on the piano bench when we entered on the scene. She brightened a bit when she saw Mr. Rolland and instinctively handed him her violin. He, in turn, took off his coat and threw it on top of the piano, tightened the bow and made a few swipes at the strings to check the tuning, advanced to the footlights and started belting the Bach all over the auditorium.

Immediately we noticed a big change in the man, like a Dr. Jekyl and Mr. Hyde transformation. This rather quiet gentle person became a raging volcano. Big chords and small chords were intermingled along with all the passage work that Bach wrote into this masterpiece, the bow pulled scales from top to bottom with a richness reminiscent of an organ and the arpeggio sequence that had posed a problem emerged with the proper accentuation. Mr. Rolland went sailing past this and didn't stop playing until he reached the quiet D major part, and the chances are that he would not have stopped there but we were on a tight time schedule.

He immediately reverted to his former pleasant smiling self and handed the violin back to the girl who was still a little bit stunned. He put his coat back on and we left the building leaving behind a group of student stage hands who

Szigeti presenting collection to University of Illinois

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seemed a bit baffled themselves

His only comment to us was "That is a magnificent bit of writing by Bach."

This little episode which consumed about fifteen minutes took care of a couple of questions that we had been planning to ask, viz., whether with his teaching of artist students, as well as children, and with all of his administrative duties combined with the String Project, he ever found time to do any playing. To our surprise and amazement, we found that this man who must work at least 80 hours a week, manages to give quite a few recitals every year at Illinois and elsewhere. And not just lip service playings either. These are full blown affairs from an enormous repertoire. He showed us recent programs which featured works by Bartok, Stravinski, Prokofief, Martinu, Kirchner, Debussy, Franck, Faure, with a liberal sprinkling of Mozart, Brahms, and Beethoven thrown in for balance. He plays a lot of contemporary works by American composers from campuses all over. He played us some memento tapes of some of these recitals. He says he can do this because he uses the scores and is not burdened with memorization. Occasionally he will play a concerto with orchestra. His sonata partner is the congenial Howard Karp, a musician's pianist and virtuoso.

We only heard the Bach excerpt but it was enough to enable us to get a glimpse of the ingredients that made up his art. Like most Hungarians, he combines the best elements of the German and Belgian schools with a little Russian and a good helping of Magyar elements thrown in, and although he was playing on an unfamiliar instrument, he managed to make it sound, somewhat like a superb horseman on a strange mount who makes the horse go his way . . . We asked Mr. Rolland about the teaching of youngsters. We were seated in his quite comfortable studio on the top floor of the "String Annex." Although he seemed quite tired from all of his activities, he rather brightened up at this query as it apparently is of the greatest interest to him:

"You know in Hungary, we looked at teaching from a different perspective from what sometimes seems to be the case here . . . the teaching of the violin to children is considered most important . . . it is also looked upon as a sacred duty and only those of the highest dedication are entrusted with it . . . in Hungary the violin is rather looked upon as the national instrument and the most lavish measures and care are taken to insure the perpetuation of the race . . . and the kids seemingly stand first in line . . . Waldbauer constantly had some pint sized students floating in and out of his classes . . . Jeno Hubay, in his younger days also worked with some youngsters, and in his studio I once saw a picture of the great Belgian Henri Vieuxtemps working with a little girl of about eight . . . one of my colleagues once ill advisedly made a comment to Waldbauer to the effect that if he (the student) ever decided to do any teaching, he certainly would not wish to have anything to do with younger students . . . he would only be interested in intermediate to advanced ones . . . Waldbauer flew into a rage at what he considered supreme insolence and practically tore this friend apart . . . "How are they to learn if no one will teach them?" . . . "And what makes you think that you will ever be capable to teach anyone of any age?" . . . etc., etc., etc. . . . Waldbauer took this very seriously . . . and when he assigned you a younger student for preparation and for coaching, you could well feel that you had arrived in his good graces, because he would never do this unless you were worthy of the task . . . Waldbauer could get rhapsodic about a youngster's classical form, his stance, his style, the balanced use of both arms, his tone production, his vibrato, etc., etc., etc. . . . as much in the playing of a scale as in a concert piece . . . he felt that "Great oaks from little acorns grow" . . . "only if the acorn is healthy" . . . this seems the common feeling of the entire staff of the Urbana Project too . . . get them started right and aim them in the right direction and they will reach the top . . .!

"A big concern of mine has always been that the fundamentals of string technique are neglected in teaching and consequently the majority of string children play very poorly even after many years of study . . . the teaching profession is not prepared sufficiently in the art of teaching the correct use of the body and the correct playing movements . . . obviously our final goal is to play music beautifully but this can be only realized on a stringed instrument by intricate and coordinated movements . . . to follow page after page in a method book without paying enough attention to the basic issues of string technique does not lead to efficient teaching!!!! . . . we should strive to develop players who not only play in tune with a good sound but who also feel comfortable and happy in so doing, and who use well coordinated movements without excessive tension as they play . . . it is of paramount importance to develop a well balanced stance, balanced right and left arms, and a balanced hold . . . GOOD BALANCE IS THE KEY TO EFFICIENT MOVEMENTS! These principles are better known to teachers of physical education and dancing from whom WE can learn to use our bodies better . . . it is an established fact that in the Japanese Martial Arts of Judo and karate, a correct appliaction of balance and balances will enable a smaller person to hold his own and possibly overcome a more powerful adversary . . . similarly a small child can be taught to play with a beautiful tone and sonority by the use of good balance of the body

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and by avoiding static tensions in his movements" . . . in the Project our stress is on the freedom of movement . . . we try to inculcate the pupil with a feeling of kinesthesia, a feeling of lightness . . . both with the bow and the instrument . . . *naturalness, naturalness, naturalness* . . .

The group which put on the concerts in Cincinnati was a second year class and easily performed such techniques as spiccato, ricochet, harmonics, shifting, and vibrato and the tone was more mature than usual with such an age group . . . all of this was achieved with class instruction . . . this does not rule out the desirability and necessity of private instruction . . . in fact, if time would permit, I would personally like to work further privately with the majority of them . . . but these project classes prove that good techniques, fine positions, relaxed bow arms and good left hands can be developed while teaching in groups.

We had spent only a short time with this man and his work and he put us through a crash program of familiarizing us with as much as possible. Being string oriented ourselves, we had little trouble assimilating most of what was offered. We also met quite a few of the staff members and found them as dedicated to their work as Mr. Rolland himself. We spent our last segment of time with him looking at his library and his instruments. Music was in the air with records and tapes being almost constantly played.

Mr. Rolland, among other things, is the inventor of the Rolland bow grip that seems to be everywhere where kids are studying the violin. He also has designed a new type of violin neck that would render more facile the ascent into the higher position. However, for ethical reasons ("It would be going against tradition") he hasn't done too much with this. He has a collection of Dolmetsch Viol bows that he uses in the course of instruction.

It was only when we left Urbana and the plane sailed over Illinois that we realized the force of the personality we had become acquainted with and began to envision the scope of the project that was completing. Involuntarily, we kept sneaking a look out of the window trying to catch an idea of how some million or so kids which Mr. Rolland plans to put into orbit would look high in the sky. "To see and hear is to believe."

With Galamian

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CHAMPAIGN-URBANA COURIER
Dec. 22, 1969

String Research Project at U. of I.

New approach to teaching music

By Mark Edwards

Stringed instrument teachers at the University of Illinois School of Music are experimenting with a new process in educating youngsters to play the violin, viola and violoncello.

The U. of I. String Research Project is the brainchild of Prof. Paul Rolland, artist - virtuoso instructor of the violin and former chairman of the string department.

This is a concerted program on string instruction that will deal with large classes of youngsters as opposed to individual lessons, but at the same time would not diminish the importance of the instructor rendering attention to each student.

Much of the inspiration for the technique stems from the Suzuki method, named after the well-known Japanese music educator. Suzuki advanced the idea of teaching a child by rote-learning in the first stages, and only later, when he is more accomplished, teaching him to read music.

Traditionally, Rolland said, the student learns to distinguish notes and read music on the first day of instruction —the same time he learns to hold and bow the instrument.

The U. of I. String Research Project's position differs from either technique: if a student is very young, of pre-school age, then beginning lessons by following Suzuki's theory of rote instruction is applicable.

However, if the student is old enough to read music or to learn to read, there is no reason why he should confine himself to learning by rote, Rolland said. It will only slow him up.

"I have been working with youngsters every summer since 1949," Rolland said. His extensive teaching experience had led him to the conclusion that the most important aspect of beginning instruction in the stringed instruments is the teaching of good sound production. The entire University of Illinois String Research Project is based on this proposition.

And good sound production is achieved through the correct use of the body and correct playing movements.

In a nutshell, this is the basis for the theory behind the University of Illinois String Research Project. The project actually got under way nearly four years ago when Rolland applied for and received a three-year grant from the Department of Education.

One year was spent in formulating the project and readying the teaching materials. Experimental Project Teaching Groups were to be conducted in the local public schools of Champaign and Urbana and in some twenty centers in Illinois. A staff was assembled, ranging from music students at the U. of I. to noted musical names.

The current phase of the project will be terminated early in 1970 when the present government grant runs out. Rolland hopes to continue the project. But if it were to close down tomorrow, he would be happy merely if he were assured that the effects of the project would be long-lasting.

Emphasis is placed on audiovisual teacher aids in the String Research Project. Students who are old enough to read music utilize films, training manuals, illustrated charts; listen to recordings and video tapes and perform a repertoire expressly composed for the project by Prof. Stanley Fletcher, instructor in piano at the School of Music.

"A lot of learning through such a program can be by osmosis," Rolland commented, "since the students are given many excellent examples to emulate in the classroom, with the films, playing with others. . . ."

The student also must learn to use all the muscles of his body without thinking for emphasis and a legato, flowing sound, Prof. Rolland asserts. He points out that dancers and athletes have long known it is ultimately easier on the body to use all the muscles in conjunc-

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tion for an action or movement, rather than merely several muscles.

What's new about these statements? Nothing. Violinists have known all this for years.

What is novel, however, is the high-powered way that Rolland and his associates demonstrate this simple truth to students.

Ultimately, the hope is that the U. of I. String Research Project will be utilized elsewhere across the nation. Rolland said a goal is to have the music and the manuals published.

The pay-off to the String Project has been noted by visitors to Smith Hall. Experts have praised Rolland's classes for the fact that after merely studying perhaps 18 months, students are playing fairly advanced pieces, and also have an appreciation for the serious literature of their instrument.

STUDENTS TUTORED

Violinist Paul Rolland tutors Lynn Senstrom and Ward Deal during sessions of the University of Illinois String Research Project while Prof. Stanley Fletcher, of the U. of I. music faculty, plays accompaniments. Fletcher, left of Rolland, composed the music the youngsters are playing.

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ORCHESTRA NEWS
Vol. IX, No. 1 (December, 1969)

PAUL ROLLAND STRING PROJECT A SUCCESS: educators laud results at demonstration clinic

"THIS IS A GREAT PROJECT – the results are amazing!" Thus Victor Aitay, Chicago Symphony Concertmaster, summed up Paul Rolland's string clinic at the St. Francis Xavier School in Wilmette, Illinois, this summer. The clinic was a successful culmination of the two year university of Illinois String Research Project inspired and directed by Professor Rolland.

The primary purpose of the project, funded by the Humanities branch of the Federal Office of Education, is development of good motion patterns to relax the beginning musician and thus improve his playing.

"The children played excellently", said Aitay, "their relaxation was obvious and it definitely improved their playing."

Seconding this appraisal of the results were other critics of the project who attended the windup clinic: Shepherd Lehnhof, Chicago Symphony violist; George Perlman, noted violin instructor; Dr. Marvin Rabin, University of Wisconsin; Robert Shamo of Lombard, Illinois, and Stanley Nosal of Kenosha, Wisconsin, both directors of instrumental music for their city's public schools.

The children who performed in the clinic were string students from 20 schools throughout Illinois participating in the project. Fourth, fifth, and sixth graders played along with recorded accompaniment specially developed for the program. Each class performed for the critics and then the entire group played under Rolland's direction.

"I believe Rolland is doing something of a revolutionary nature," said Perlman. "His students are far ahead of any other first or second-year students in freedom of bowing and in their intonation. His methods are the first specifically American contribution to the business of violin pedagogy. They are the coming thing in string education. I am convinced of it!"

The Chicago Tribune, recognizing the importance of the Rolland Clinic, sent Art Walker, one of their top reporter-photographers, out to cover the event. He was intrigued with the playing ability of the youngsters and the joy they evidently experienced in playing.

This obvious enjoyment in the music-making is understandable when you observe Professor Rolland's demonstrations with

The boys didn't seem to mind taking time off from baseball and hockey to "show off" their violin prowess at the Rolland clinic.

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the youngsters . . . when you watch them happily swaying and tapping their feet to the rhythm of the music.

Rhythmic movement is a vital element in Rolland's teaching. The children step, clap, and tap their feet to find the rhythm of the tunes. They also carry their violin cases to the sound of music to develop "violin muscles." The cases are carried above their heads as the children move with the music.

The goal of each exercise is to "free" the pupil from the static, tense traditional violin position.

Short films, using beginning students in the Champaign-Urbana schools, illustrate each technique and phase of instruction. The topics include "Remedial Teaching;" "Establishing the Violin Hand"; "Learning to Hold the Bow"; and "Extending the Bow Stroke."

Two principles emphasized by Rolland are flexibility and mobility: "If something is stiff – move it. The child must be able to relax and enjoy the music and playing," he said. "A child's position can be perfect and he may still not be able to play."

Perlman credited the compositions used in instructing the children with much of the success of the project. "They have a good time because they feel as though they are playing a concerto, while they are actually playing a primitive piece of music."

"The youngsters' emotional response to the music is unequalled," Perlman said. "All you have to do is look at their faces to know they are enjoying themselves."

Study Extended Until February, 1970

Rolland said the project, which was to have ended next month, has received additional federal funding to extend the study to Feb. 1, 1970. The extra time will be used in writing reports and producing more films and compositions.

"I have had many requests for our manuals and films," Rolland said. "They are part of the public domain and hopefully will be distributed to the profession early next year."

Rolland, Professor of Music at the University of Illinois for more than 20 years, said he hoped the results of the project would result in a "shot in the arm" for the field of string instruction.

He said although the current series is for violin only, the principles are valid for other string instruments.

Cooperating teachers in Illinois project centers are: Deanne Bryant, Normal; Ralph Bowen, Springfield; Virginia Campagna, Godfrey; Tanya Carey, Western Illinois University Campus School, Macomb; Richard Casper, Peoria; Bonzie Gilbert, Bloomington; John Hayter, Jacksonville; Don Langellier & Wayne H. Pyle, Quincy; Jerald Slavich & Edward Wilcox, Champaign; Norman Werner, Decatur; Irene Adler, Deerfield; Lawrence Christiansen, Elgin; Milton Goldberg, Winnetka; Judith M. Graham, Morton Grove; Thomas R. Hageman, Wheeling; Marlou Johnson, Lincolnwood; Nora A. Roll, Chicago; Marylyn Sexton, Lombard; Sister M. Michelle, Chicago; Sister Theodata, Wilmette; George Teufel, Elmhurst. ■

Above, fifth graders from Lombard, Ill. play pizzicato. Below, Heidi Wilcox, 6, and Susie Wijsman of Champaign, Illinois.

Pleased "critics" appraise Lincolnwood pupils' progress. Standing, Nosal and Rolland; seated, Aitay and Shamo.

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CHAMPAIGN-URBANA COURIER
Jan. 17, 1970

10 violinists at conference

Ten violinists from the laboratory classes of the University of Illinois string research project will assist Prof. Paul Rolland in a dedemonstration at the Midwestern Music Conference sponsored by the University of Michigan at Ann Arbor today.

They are Debbie Evans, Laura and Heidi Wilcox of Champaign and Louise Brodie, Ward Deal, Cynthia Healy Susan Lo, Lynn Stenstrom, David Voigtlander and Roberta Yoss of Urbana.

Ed Wilcox, string instructor in the Champaign schools and Mrs. Hames Healy accompanied the group to the conference.

The group presented solos and ensembles composed by Prof. Stanley Fletcher of the U. I. music faculty and demonstrated the smooth, tension-free motion patterns being developed by the research project, a program funded by a three-year grant from the U. S. Office of Education.

CHAMPAIGN-URBANA NEWS-GAZETTE
March 9, 1970

UI Musical Groups At Conference

Several choral and instrumental groups from the University of Illinois are playing prominent roles at the Music Educators National Conference, meeting in Chicago through Wednesday. Eighteen thousand professional music educators are attending the meetings.

The University Chorale, conducted by Prof. Harold Decker, presented a lecture-demonstration program, "Stylistic Trends in Contemporary Choral Music." Included in the graduate choral group's 45-minute concert were compositions by Ives, Stravinsky, Debussy, Edwin London and UI Prof. Gordon Binkerd.

The Binkerd compositions were "Nocturne for Cello and Mixed Voices," with Prof. Robert Swenson as cello soloist, and "In a Whispering Gallery," a setting of a Thomas Hardy poem about the famous whispering gallery in St. Paul's Cathedral, London.

Jazz Band Plays

Friday evening, the UI Jazz Band, recently returned from a State Department tour of Russia, gave a concert, led by Prof. John Garvey. Selections included "The Magic Flea," "Moon Trane," "Summertime," "Sister Sadie," "My Funny Valentine," "The Old Beelzebub Blues," "You Are Too Beautiful," "I've Got My Mojo Working," "I'm Glad There Is You," and "The Lunceford Touch."

Sunday morning, Prof. Paul Rolland, head of the UI string research project, led a group of 17 local school children in a demonstration concert for both music educators and the Association. The children played music specially commissioned for the project from such contemporary composers as Halsey Stevens, Alan Shulman, Seymour Shifrin, Richard Wernick, and U. of I. Prof. Stanley Fletcher.

The children also were heard in a Vivaldi Violin Concerto. They were accompanied by the Champaign Junior High School String Orchestra, conducted by Edward Wilcox.

Members Listed

Children from Champaign are Barbara Cordes, Susie Wijsman, Lucie Lin, Laura Wilcox, Heidi Wilcox and Debbie Evans. From Urbana, Louise Brodie, Cynthia Healy, Susie Lo, Betty Yen, Frances Yen, Beal Ward, Roberta Yoss, Douglas Himelick, Lynn Stenstrom, Andra Patton and David Voigtlander.

At 10:45 a.m. Tuesday, the UI Wind Ensemble, conducted by Prof. Robert Gray, will present a concert of music by Richard Strauss, Eugene Bozza, Thomas Fredrickson, Ludwig van Beethoven, Paul Hindemith and Vaclav Nelhybel.

Prof. Fredrickson's "Wind Music One (1970)" was composed for the UI Wind Ensemble and will be given its premiere at the Tuesday concert. The Nelhybel composition, "Concerto Spirituoso for Winds and Percussion (1958)," was premiered by the Wind Ensemble in 1967.

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CHAMPAIGN-URBANA NEWS-GAZETTE
May 2, 1970

NATIONAL MUSIC WEEK OBSERVED BY UNIVERSITY OF ILLINOIS STRING RESEARCH PROJECT AND CENTENNIAL HIGH SCHOOL STRING QUARTET

The University of Illinois String Research Project, Paul Rolland, Director, and the Centennial High School String Quartet, Edward Wilcox, Instructor, will present a joint program of string music and films.

The program, which will begin on Sunday, May 3, at 2:30 P.M. at the Illini Union, Room A, will present children from the local string research project classes at the conclusion of the third year of study. The String Research Project, now in its final year, is supported by a grant from the U. S. Office of Education.

The children will present original compositions of Professor Stanley Fletcher of the University of Illinois School of Music and pieces by other prominent composers who have written music for the Project. Two color films, presenting principles of string playing and featuring the local children, will also be shown. The program will conclude with a performance of the entire Concerto in G Major by Vivaldi, accompanied by Jr. High School string players from the Champaign schools.

Members of the project class are: Louise Brodie, Cynthia Healy, Susie Lo, Betty and Frances Yen, Ward Deal, Roberta Yoss, Lucie Lin, Lynn Stenstrom, Andra Patton, David Voigtlander, Laura and Heidi Wilcox, Debbie Evans, Carl Skowronski, Andrew Scheinman, Mary and Carol Voigtlander, Jeff Miller, and Susan Marr.

Marks Ginsberg, Barbara Cordes, Susie Wijsman, and Chris Debrunner, a Champaign cello class directed by Lee Duckles, will assist with the program. They will play contemporary works and several Chorales by J. S. Bach.

At 4:00 P.M. the Centennial High School String Quartet will perform works of Mozart, Mendelsohn, and Walter Piston. Members of the string quartet are Dan Foster, Jim Chow, Warren Emery, and Ed Lyke. The Centennial quartet has been chosen to participate in the Chamber Music Symposium at Allerton Part on May 15, 16.

The public is invited to attend. There will be no admission charge.

A similar program will be offered as a promenade concert on Tuesday, May 5 at Lincoln Square at 7:00 P.M. National Music is celebrated throughout the United States during the week of May 3-9.

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CHAMPAIGN-URBANA COURIER
and
CHAMPAIGN-URBANA NEWS GAZETTE
Dec. 1, 1970

UI String Group To Youth Concert

Children in the University of Illinois String Research Project class are one of two youthful string groups in the country invited to participate in a performance, "The Sounds of Children," Dec. 15 at the 1970 White House Conference on Children and Youth, Washington, D.C.

The concert will be televised by NBC-TV.

Seventeen area children participate in the project, which is directed by Paul Rolland, professor of music at the UI. Children in the class, whose ages range from 8 to 12, are Gwenyth Bailey, Louise Brodie, Ward Deal, Debbie Evans, Cynthia Healy, Lucie Lin, Susan Lo, Andra Patton, Lynn Stenstrom, Sally Tien, David Voightlander, Eric Wilcox, Heidi Wilcox, Laura Wilcox, Betty Yen, Frances Yen and Roberta Yoss.

The UI String Research Project is supported by a grant from the U. S. Office of Education. Using methods and materials developed by Rolland, the project aims at increasing the quality and speed of learning of beginning violin students. Children in many Illinois communities are using the program, which develops tension-free movements and better body coordination in violin playing.

Though the invitation from Stephen Hess, national chairman of the White House Conference, provides travel expenses for only 10 of the 17 children, Rolland hopes to raise enough funds so that all 17 may make the trip.

Tentative plans calls for the group to leave Urbana Dec. 13. The Dec. 15 performance will be "the high spot of a very eventful week and will call national attention to the innovative and creative work in which so many young people are engaged," Hess said.

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CHAMPAIGN-URBANA NEWS GAZETTE
March 11, 1971

LEAVING FOR CINCINNATI CONCERT. Prof. Paul Rolland of the University of Illinois music faculty leads four of his group of 16 local child musicians in a final rehearsal Wednesday. Clockwise from bottom left, the children are Lucia Lin, David Voigtlander, Sally Tien and Heidi Wilcox, who with eight others were to leave at noon Thursday for Cincinnati where they will play music at a Music Educators' National Conference. The group was featured last December on NBC-TV during a concert they gave in the White House at a Conference on Children and Youth.

UI Project Children In Concert

Children in the University of Illinois String Research Project will appear in concert Friday morning at Cincinnati, Ohio, before a meeting of the Music Educators National Conference.

Sixteen local children, ranging in age from 8 to 12, will play, under the direction of Paul Rolland, professor of music at the UI. They are Louise Brodie, Ward Deal, Debbie Evans, Cynthia Healy, Lucie Lin, Susan Lo, Andra Patton, Lynn Stenstrom, Sally Tien, David Voigtlander, Eric Wilcox, Heidi Wilcox, Laura Wilcox, Betty Yen, Frances Yen and Roberta Yoss.

The children performed at the 1970 White House Conference on Children and Youth Dec. 15 in Washington, D.C.

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APPENDIX C

EVALUATION QUESTIONNAIRES, FORMS AND DATA NOT INCLUDED IN THE TEXT

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FORM ONE

UNIVERSITY OF ILLINOIS
String Research Project

Permanent Evaluation Sheet

Date School Teacher

1. Ask two students the following questions:

    a. Do you practice at school or at home?

    b. What do you enjoy most about practicing?

    c. What do you enjoy least about practicing?

    d. What have you been asked to do that is difficult and you haven't been able to get?

2. What films have been viewed? (Give dates)

    a. What film did you see last?

    b. What do you remember most about the film?

    c. Did you see any films more than once? If so, on second viewing, what different things did you notice?

    d. What has your teacher taught you that is just like what you saw in the film?

3. Is there any noticeable difference in stance and bow-violin position?

Signed

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FORM TWO

UNIVERSITY OF ILLINOIS
String Research Project

GENERAL QUESTIONS AND INFORMATION
First Year Classes

(Names of students will be used in answering questions. Also numbers of students who get or do not get objectives.)

DATE

__________ 1. Give list of students by name, instrument, grade level, and in order of advancement. (Please indicate if students have record player at home.)

__________ 2. Use "word rhythms" cards and see if the students can read and vocalize the rhythms on their own. Try same rhythms also using pizzicato or bow. (No help in reading or playing shall be given!)

Student No. 1 Yes_____ No_____
Remarks:

Student No. 2 Yes_____ No_____
Remarks:

EVALUATION FOR FIRST YEAR STUDENTS

__________ 1. Has small adhesive marker been placed on fingerboard?
Yes_____ No_____ (Correct or incorrect placement)

__________ 2. Is the left hand and arm in correct position while playing left hand pizzicato?

__________ 3. Are metal fine tuners or Thomastic tailpieces being used?

__________ 4. Is each students stance correct?
a. Number Yes_____ b. Number No_____ c. Number in doubt_____

a.

b.

c.

__________ 5. Is the transfer of violin to regular position correct?
a. Violin level

b. Relationship to neck--collarbone--jaw

c. Placement on shoulder

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__________ 6. If seated, is the sitting position correct:

a Are the students able to sit & stand with correct movement?

__________ 7. Is the Shuttle Game being used?
a. Ease of movement & pizzicato while shifting?

1. Rest position

2. Regular position

__________ 8. Is the left arm swing being used?

__________ 9. Is the tapping game being used? (Are the following positions correct?)

a. Fingers and thumb

b. Hand and wrist

c. Arm movement

TEACHING MATERIALS AND AIDS:

__________ 1. Are word rhythms being used? (Which words)

__________ 2. Are recorded melodies being played while students use left hand pizzicato on open strings? Check melodies being used.
Lightly Row__________
Skip to my Lou______
Mary Had a Little Lamb__________
Others:

__________ 3. Are students doing activities with the pulse of music?
Pizzicato____________ Bow__________
What music is being used? (Types of activities)

__________ 4. Is the "Case Walk" being used? (Do student and teacher understand purpose?)

__________ 5. Is the "Statue of Liberty" game being used? (Do student and teacher understand purpose?)

__________ 6. Are chin rests suitable for all students?

__________ 7. Is any type of shoulder pads being used?

__________ 8. Is the position of fingers 1, 2, 3 of the left hand correct?

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__________ 9. Has dowel stick, pencil, or similar device been used in preparing bow hold?

__________10. Has the thumb and middle finger circle technique been used?

__________11. What is the result of placement of all fingers on bow?

__________12. Is the early bow hold (high) still being used, and if so, what is the result? Give date when you notice that it is discontinued.

__________13. Are these motion games being used?

a. Place and lift

b. Rock the bow

c. Shadow bowing

REGULAR VISIT COMMENT SHEET

Evaluator __________

Visit Number __________ School ____________________ Date __________

First or second year class __________________ Teacher ______________

Project materials used in class:	Properly used Yes	No (Explain)
______________________________	___	__
______________________________	___	__
______________________________	___	__
______________________________	___	__

Number of minutes spent on project materials in class? ______________

Project materials assigned for home study:

Were they properly explained? Yes _____ No _____ If no, explain.

Is the class moving too fast, too slow, or about right?

FIRST YEAR CLASS
FIRST VISIT

1. List students by name and instrument (in order of potential) as a string player. (Obtain from teacher.)

2. Report all students without proper equipment by name. (Proper size instrument, adhesive markers, metal tuners, record player at home, records, books, shoulder pads, chin rests, etc.--obtain from teacher if need be.) Identify what is missing.

3. List films shown, number of times, and dates.

Comment on:

STANCE:

Number of students following project principles ________

Number incorrect _______

Number in doubt _______

VIOLIN POSITION:

Number of students following project principles _______

Number incorrect ________

Number in doubt _______

(Consider level, relationship to neck, collarbone, shoulder position)

LEFT HAND PIZZICATO:

Number of students following project principles ______

Number incorrect ______

Number in doubt _________

Request of teacher or do yourself with two or more students:

1. Word rhythm card
2. Case walk

FIRST YEAR CLASS
SECOND VISIT

Comment on:

SHUTTLE GAME:

(Include ease of movement and pizzicato in various positions)

Number of students following project principles ________

Number incorrect _______

Number in doubt ________

Not done in class _______

LEFT ARM SWING:

Number of students following project principles _______

Number incorrect ________

Number in doubt _______

Not done in class ________

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TAPPING GAME:

(Consider fingers and thumb, hand and wrist, and arm movement)

Number of students following project principles ________

Number incorrect ______

Number in doubt ______

Not done in class ______

STATUE OF LIBERTY

Number of students following project principles ________

Number incorrect ______

Number in doubt ________

Not done in class _______

MOVE TO MUSIC

Number of students following project principles _______

Number incorrect _____

Number in doubt ______

Not done in class ________

INDIVIDUAL QUESTIONNAIRE

Student #1 Name ________________________

What use are you making of the record--include songs and activities for each?

Student #2 Name _______________________

What use are you making of the record--include songs and activities for each?

Ask students to demonstrate--take pictures if possible.

Proper position of violin--regular position

High bow hold

Regular bow hold

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Second student:

Proper position of violin--rest position

Proper position of violin--regular position

High bow hold

Regular bow hold

FIRST YEAR CLASS
THIRD VISIT

Ask the following questions of students

"Did you use the thumb and middle finger circle technique, and if so, what did you use it for?"

ASK STUDENTS TO DEMONSTRATE TUNING THE INSTRUMENT.

Demonstrate:

1. Position of left hand fingers

2. MOTION GAMES--place and lift, rock the bow, shadow bowing

FIRST YEAR CLASS
FOURTH VISIT

Teacher Questionnaire

1. For your first year students, what and why is certain material most helpful? (Rank in order 1, 2, 3, 4, 5, 6, 7. If did not use--mark N. U.)

   Record I -

   Drill record -

   Fletcher tune record -

   Music to accompany record I -

   Sight Reading Materials -

   Films -

   Teachers manuals -

2. Do you feel that developing proper position for the left hand is a continuous process for the first year or so, needing constant reminders from the teacher?

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Are there special exercises which help the left hand establish correct position which you use? If so, please list. (Same for right hand.) Answer why if time allows.

CLASS OBSERVATION AND DEMONSTRATION

1. If tapping is used in class, list what fingers are used.

2. Spiccato bowing

    a) Is high bow hold used when first trying to bounce the bow?

    b) Is the bow hung on the left fourth finger to prepare the bow grip?

    c) What part of the bow is used for spiccato strokes?

    d) Is the bow hold relaxed, fingers curved?

INDIVIDUAL EVALUATION SHEET

Student's name ____________________

Play a rhythm or clap one--have him imitate it on his instrument.

Have him cross strings--does he keep one finger down and prepare the string crossing?

Have him play some flying pizzicato--does he shift weight to the left foot?

Student's name _________________

Play a rhythm or clap one--have him imitate it on his instrument.

Have him cross strings--does he keep one finger down and prepare the string crossing?

Have him play some flying pizzicato--does he shift weight to the left foot?

TEACHER QUESTIONS

1. Did you use the dowel stick in preparing the bow hold? If so, how much time did you spend on it?

2. Did you use the early bow hold? If so, for how long and what are your comments?

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FIRST YEAR CLASS
FIFTH VISIT

School ______________

Teacher ______________

Date ______________

Evaluator ______________

CLASS OBSERVATIONS AND DEMONSTRATION

1. Comment on left hand position -

   Finger angle -

   Balance of the hand when fourth finger was used -

2. Martelé--staccato

   Is the articulation clear or choked ____________________

   Is the articulation biting or fuzzy ____________________

   Does the bow arm follow through--curve upward slightly after the martelé stroke?

   Is the bow well supported?

INDIVIDUAL EVALUATION SHEET

Student's name ____________________________

Select something for the student to play martelé.

a) Is there a clean pop on each stroke?

b) Are students aware that direct pressure causes the stick to meet the hair?

c) Can the student now articulate a stroke almost equally well in any part of the bow?

d) Is the wrist lowered when playing at the tip?

e) Are wrist and fingers slightly curved at the frog?

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TEACHER QUESTIONNAIRE

1. Of the films shown to your class, rank them in the order they should be shown (in your opinion).

2. Now rank them as to their value for their purpose as indicated by the film title.

3. What do you miss most that you need to cover in your teaching that is no longer possible because of the use of project materials?

FIRST YEAR CLASS
SIXTH VISIT

1. Have two students:

(A) Student name ______________________________

Play the whole step pattern.
Comments:

(B) Check students for readiness for string crossing.

(C) Have student play continuous strokes. Observe wrist and finger flexing.

(D) Can the student place the bow on the string, rest it there, relaxing the grip? Do the fingers stay curved? Can they rock the bow? Roll the arm?

(A) Student #2 name ______________________________

Play the whole step pattern.

(B) Check student for readiness for string crossing.

(C) Have student play continuous strokes. Observe wrist and finger flexing.

(D) Can the student place the bow on the string, rest it there, relaxing the grip? Do the fingers stay curved? Can they rock the bow? Roll the arm?

TEACHER QUESTIONS

1. What materials and how did you introduce low placement of first finger?

Comments on particular success or failure:

2. What are you using from the drill records?

   Comments:

3. Has any preparation been made for string crossing? What?

4. What vibrato preparation work has been accomplished? Has actual vibrato begun? What students are having success?

CLASS OBSERVATION

1. Was any material used requiring low placement of first finger?

   yes ________

   no ________

2. Comment on place and lift strokes while maintaining a good bow hold. Do students correct stiff holds after bow placing bow on string?
3. Observe release of long bow strokes.

4. Observe long shifts--"The Flute."

5. Have teacher have entire class do note-rest-note for you from drill record II.

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EVALUATION FOR SECOND YEAR STUDENTS

____
Visitor

____________________ ____________________ ____________________
Date School Teacher

________ 1. Give evaluation of what material, manuals, films, music has been covered the previous year.

________ 2. What materials were used to start the second year of study and what present material is being used?

________ 3. A. Ask students the following questions:
1. Play octave with 1-0 fingering & 3-0 fingering.

2. Play any tune in two different positions.

3. Play short détaché at various parts of the bow.

4. Demonstrate usage of whole tone pattern.

B. What music was used in demonstrating the above questions?

C. Did the students understand and know the above material?

________ 4. Films:
A. When was the last film seen and what film?

1. Was the film seen more than once? Yes____ No___

2. If seen a second time, did students notice anything new or different that was not seen before?

________ 5. Did the students develop any bad habits over the summer that were pointed out by the teacher, and what was done to correct them?

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__________ 6. Ask the students what is the most difficult thing they are working on right now.

__________ 7. While the student is playing take a picture of left and right hands. What is the student playing?

__________ 8. Find what each student practiced the previous week.

__________ 9. Give each student a piece of paper at the end of the lesson and have him write the most important thing he learned in today's class.

SECOND YEAR CLASS
SECOND VISIT

School ____________________

Teacher ____________________

Date ____________________

Evaluator ________________

INDIVIDUAL OBSERVATION

Student name ______________________________________

1. Determine if he can find harmonics in playing octaves.
2. Have him play "ghosts" and "flute."

CLASS OBSERVATION

1. Comment on the angle of the fingers on the E and A strings. Use student name.
2. Do you notice any squeezing between first finger and thumb?
3. Is there enough finger pressure to produce a good sound?
4. In the "ghosts" do the fingers flatten as they reach the end of the fingerboard?

TEACHER QUESTIONNAIRE

1. Please rank the films you have shown this year in the order of their value to you.
2. Provided that you used them, what function do the Fletcher tunes have in the program?
3. What function do the drill records and the Sight Reading materials have in the program?
4. Do you understand the directions for Action II, A-1 in manual "Developing Flexibility?" Explain.
5. What uses do you see for Action I in manual "Developing Flexibility?"

SECOND YEAR CLASS
THIRD VISIT

School ____________________

Teacher ____________________

Date ____________________

Evaluator ________________

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TEACHER QUESTIONNAIRE

1. Ask teacher to explain how he has introduced martelé and how the students have responded.

2. Ask the teachers what materials they are using on shifting and whether they have any comments on student progress of shifting.

3. Ask teachers to put all films they have seen in both years into what they see as a pedagogical sequence.

CLASS OBSERVATIONS

1. What rhythmic activities are being used--polyrhythms, feeling for beat, counting, tapping feet, etc.?

2. In horizontal finger movement, do the fingers move and bend without the hand moving?

3. Do the students play pizzicato and then arco when learning something new?

SECOND YEAR CLASS
FOURTH VISIT

School ____________________

Teacher ____________________

Date ____________________

Evaluator ____________________

INDIVIDUAL QUESTIONS

Student's name ________________________________

1. Is the finger angle correct (pressure toward the scroll)?

2. Evaluate his total performance on one Fletcher tune.

TEACHER QUESTIONNAIRE

1. What are the strength and weaknesses of each student as you perceive them? Include ranking.

CLASS OBSERVATION

1. What method was used for tuning?

2. Can the students match the octave in fifth position?

3. Is the violin hold reasonably secure?

4. Does the entire arm move in shifting?

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University of Illinois String Project Evaluation Sheet
Fact Sheet

TEACHER

SCHOOL ADDRESS

PHONE

BEGINNING DATE __________

CLOSING DATE ____________

TOTAL WEEKS OF CLASS ______

FILMS SHOWN

TOTAL NUMBER OF VISITS ______ ASSISTANT(S)

CLASS LIST

Student	Age	Grade	Parent Name & Address	Phone

FORM THREE

Name ____________________________ Grade _______ School ________________

Please show which school subject you like best, next best, and so on by placing a number 1 by your favorite subject, number 2 by your next favorite and on down until you have ranked all your subjects. If you are not taking or have not taken a certain subject, do not rank it--leave it blank.

__________ Reading

__________ Science

__________ General Music

__________ Art

__________ Spelling

__________ Gym

__________ Instrumental Music (orchestra or string class)

__________ Instrumental Music (Band)

__________ Choir

__________ Social Studies

__________ Homeroom

__________ Football

__________ Basketball

__________ Baseball

__________ Language

__________ Math

__________ Health

__________ Creative Writing

__________ English

__________ Tumbling

__________ Modern Dance

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FORM FOUR

VIDEO EVALUATION
COMMENTS OF EVALUATORS
January-February, 1969

Coding: C designates control classes; P designates project classes. (Numbers indicate school codes. Example: P-16a = School Code 16.) a designates first-year classes; b designates second-year classes.

TOPIC: The "Shuttle"
Evaluator: Joshua Missal

High = 5

CODE	COMMENTS	RATING
P-16a	Violin--needs adjustment of position of instrument: Too far to left. Exaggeration of pizzicato. Cello and bass--well done.	4
P-17b	All violins tend to place instrument too far to left. Thumbs in some cases are either too bent or are allowing violin to sink into palm. Pizzicato exercise, however, appears to be quite free of arm tension.	3
P-13a	Thumbs in all cases incorrect--especially in higher positions, sinking into crotch. Pizzicato awkward; arm tense in one case.	2
C-7b	Thumbs do not move with arm--especially coming back to first position.	3
P-2b	Thumb in first case keeps arm from being free. All thumbs too rigid and incorrect in placement! Pizzicato exercise awkward throughout.	1
P-9b	Tension in action. Thumbs generally poor. Action contrived. Position of violin generally good.	2
P-6a	Generally good shuttle action. Thumbs again generally poor--particularly in return to first position. Position of violin generally fair.	3
C-1a	Shuttle action stiff. Thumbs generally poor in placement.	2
C-2a	Pizzicato stiff and awkward. Film shows only one view! Thumbs poor. Position of violin under chin generally weak.	2
P-14b	Excellent shuttle exercise. Thumb position weak in a few cases.	5
P-15a	Head position weak in a few cases. Good shuttle work. Shoulder pads needed in every case.	4

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Evaluator: Kent Perry

CODE	COMMENTS	RATING
P-16a	Unstable position of violin. Bass and cello better.	2
P-17b	Excellent stance (first girl). Another--good. Boy less stable. Fourth student's thumb too curved (tip touched neck).	4
P-13a	Students appeared apathetic. Too much finger action. Poor positions all around. Left elbow touched side.	1
C-7b	First student held violin too far toward right. Thumb too high. Second student good position.	4
P-2b	First student: not enough support of violin--depended on left wrist. Students two and three much better. Fourth student thumb too curved. All tend to hold violin too low. All need to hold violin more to left.	1
P-9b	All students good control--needs more forearm involvement in pizzicato. All appear rigid, although position is pretty good.	4
P-6a	Pizzicato began in first position in each case, although a fair amount of control of the instrument was apparent.	3
C-1a	Good positions except for thumbs. Contrived motions. Last child's wrist collapsed.	3
C-2a	Thumbs too high. Slow, contrived motion. Unstable control.	1
P-14b	More freedom evident. Shifting motion somewhat jerky. These cover more fingerboard.	5
P-15a	Pizzicato began in first position. Less control. More consistency among group. Last child had difficulty with left hand.	4

Evaluator: Priscilla Smith

P-16a	Violin seems insecure--a little too much arm motion is involved in the pizzicato, particularly in cello and bass.	4
P-17b	Excellent arm positions--fingers above strings are spread in excess which tend to cause lack of control in the use of pizzicato.	4

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CODE	COMMENTS	RATING
P-13a	Lacks freedom of motion with left arm. Fingers have rigidity. Tension in overall approach to hold of instrument.	2
C-7b	Thumb does not move with motion of hand. Left hand remains above strings in reasonably good position.	3
P-2b	Hold of violins--excellent. A little too much jumping to and from the higher positions. Left arms good--thumbs are stiff.	3
P-9b	Instruments seem more secure--but motion is much too rigid in the shuttle.	2
P-6a	Left arm adjustment from low position to high very good. For most part violins are extremely high but motion has freedom.	4
C-1a	Very tense in movement. Thumb is tight--wrists too close to neck of instrument.	1
C-2a	Hand does not move with fingers--in most cases the neck rests too far in the crotch.	1
P-14b	Much freedom--hands are remaining over fingerboard in excellent positions.	5
P-15a	Must secure instrument with right hand in order to move over fingerboard.	2

TOPIC: "Fly Pizzicato"
Evaluator: Joshua Missal

P-20a	Action in most cases not natural. Position of violin seemed weak.	2
C-3b	Action not natural. Knees bend. Motion of body sometimes in opposite direction.	2
P-15a	Cellos weak. Body motion of violins exaggerated. Overall weak.	1
P-6b	Motion in two of three cases good. Left hand position suffers in two cases.	3
P-6a	Overall motion good--very free. Somewhat exaggerated.	4

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CODE	COMMENTS	RATING
C-1a	Unnatural motion. Stiff. Poor overall. No body movement.	2
C-2a	Little motion. Awkward and stiff. Overall effect poor.	1
P-16a	Right arm movement generally good. Body motion nonexistent in most cases. Cellist uses wrong hand!	2
P-17a	No body motion--except for incorrect pulling away of left arm. Of little good to youngsters.	1
P-19b	Overall body movement nil. Exercise generally weak.	2
P-13b	Good arm movement. No body movement.	4
P-2a	No conception of exercise.	1
Evaluator: Kent Perry		
P-20a	In every case the violin travelled in same direction as pizzicato motion instead of in opposite direction. Left hand positions rather poor. Too much weight on right foot.	1
C-3b	Too much motion. Violin still going to right.	2
P-15a	More natural motions. Two students moved violin properly to left, except for the one who pivoted the instrument.	4
P-6b	Much more flexibility and natural motions, except for one child who placed too much weight on right foot.	5
P-6a	Best yet in terms of flexibility.	5
C-1a	Exaggerated pizzicato motion. Not enough body flexibility.	1
C-2a	Wide variance among styles in this group. On the whole there seems to be more flexibility despite idiosyncracies of style here and there.	2
P-16a	Good involvement of knees in most cases.	2
P-17a	Fast, but natural motions.	4
P-19b	Flexibile. A little contrived. Left hand positions not too good.	4

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CODE	COMMENTS	RATING
P-13b	Students stand stiffly.	1
P-2a	Stiff, contrived (pizzicato concentration).	1

Evaluator: Priscilla Smith

P-20a	Motion of right arm is good--body stance lacks rigidity but hold of instrument is tense.	4
C-3b	Body movement is too extreme. Arm movement too limited.	2
P-15a	Motion of arm is too broad but there is a certain amount of existing freedom.	3
P-6b	Because of the holding of the bow the motion from the pizzicato around is limited.	3
P-6a	Extreme motion. Seems flexible with excellent body movement.	5
C-1a	Right arm motion good. Body motion is tense.	3
C-2a	Individual variation is great. Each motion is quite different and with wrong approach.	1
P-16a	Right hand motion excellent--body motion corresponds with motion of arm. Left hand is fine--cellist used wrong hand for motion.	4
P-17b	Right hand movement seems too fast for accomplishment of the purpose.	2
P-19b	Stiffness is very obvious--motion lacks flexibility.	1
P-13b	Right arm motion good. Body movement is nil.	2
P-2a	Extreme rigidity in all motions.	1

TOPIC: "Place and Lift"
Evaluator: Joshua Missal

P-20a	Generally good. Position of fingers stiff.	3
C-3a	Incorrect bow grips. Disagree with holding bow other than at frog for this exercise. Bows bent in wrong direction.	1
P-6b	Generally good. Check tilt of bow.	4

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CODE	COMMENTS	RATING
P-9a	Bow grip generally good if somewhat stiff. Wish one could see more use of different parts of bow.	3
P-9b	Check tilt of bow--usually bent in wrong direction. Otherwise well done.	4
C-1a	Different type of exercise completely! Tilt of bow incorrect most of the time.	2
P-19b	Generally good bow control. Left hand weak at times.	4
P-19a	Good bow control in some and very poor in others! Left hand position generally poor! Cello good.	4
P-13b	Generally very good. Last youngster weaker.	4
C-7a	Tilt of bow incorrect. Bow grips incorrect. Head positions poor.	1
C-7b	Somewhat better than C-7a. Left arm and head positions stiff.	2
P-2b	Bow grips good--left arm position inconsistent. Third youngster poor! Overall exercise good.	4

Evaluator: Kent Perry

CODE	COMMENTS	RATING
P-20a	Finger placement awkward but curved.	2
C-3a	Wide variance of styles. Two good positions.	1
P-6b	Fourth finger on screw. More use of different parts of bow. More flexibility.	5
P-9a	All students used middle of bow. Some high wrists. Quick, jerky motions. Better finger curves.	3
P-9b	Good finger placement except first knuckle too low.	4
C-1a	Wrong motion, placement. The "shaking out" idea is good, but not consistent with purpose of this particular exercise. Bow grips bad, low wrists.	1
P-19b	Excellent bow grips.	4
P-19a	Poor bow grips. Wide placement of fingers. Cellos better.	1

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CODE	COMMENTS	RATING
P-13b	Good bow placement. Control at each segment. A few poor grips--stiff fingers.	4
C-7a	No freedom of movement. Stiff, angular motions. Poor positions.	1
C-7b	Last student (boy) had good bow control and finger placement.	4
P-2b	Fingers too straight on most students. Then suddenly changes to good bow grips. Wide variance. Good low placement. Each student very careful.	3

Evaluator: Priscilla Smith

P-20a	Hand position is reasonably good--but there is certain stiffness in the fingers.	3
C-3a	Motion is acceptable but fingers have rigidity.	2
P-6b	Lift of bow is adequate--stiffness is not as obvious here.	3
P-9a	Finger placement on bow is quite wide.	2
P-9b	Certain control in the motion--particularly in various parts of the bow.	4
C-1a	Very poor motion and control of bow.	1
P-19b	Motion is good.	3
P-19a	Extremely rigid fingers and wrist motion.	1
P-13b	Right arm directional motion good. Control is quite above average.	4
C-7a	Tip of bow is consistently wrong. Stiffness in fingers is quite prevalent.	2
C-7b	Finger placement on bow is extremely wide. Rigidity is less than preceding group.	3
P-2b	Little finger on bows seems quite stiff in most cases.	3

TOPIC: "Tapping"
Evaluator: Joshua Missal

P-10a	Wrong approach to exercise. Very few used arm.	1

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CODE	COMMENTS	RATING
C-4b	No use of arm.	2
P-14b	Well done!	5
P-9a	No use of arm. Too much use of fingers alone. Good position of left arm.	2
P-6a	Not enough use of arm. Thumb position weak in most cases. Too much finger action.	2
C-5a	No use of arm--but there is good movement of hand. Palm braced against body of instrument. Not enough freedom.	3
C-8b	Palm braced against instrument causing arm to remain inactive. Good use of hand movement, though. Last group of five excellent--versus first group of three fair!	3
P-16a	Too much finger action, not enough arm movement. Weak position of left arm in several instances.	2
P-17b	No application of principle!	1
P-13b	No application of principle.	1
P-13b	Poor left hand positions. Poor overall approach.	1
P-2b	No application of principle.	1
Evaluator: Kent Perry		
P-10a	Good in each position.	4
C-4b	Slow but more controlled and relaxed.	5
P-14b	Excellent arm vibrato	5
P-9a	Good control of instrument. Vibrato somewhat restricted. Good thumb placement. Not enough arm involvement.	4
P-6a	Poor thumbs--grip tightly--too curved. Difficulty moving up and down neck.	2
C-5a	No involvement of forearm. Palm touches upper bout.	3
C-8b	All good wrists. The larger students did better with forearm.	4

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CODE	COMMENTS	RATING
P-16a	Good flexibility throughout, although a few had little control of the violin.	4
P-17b	Good.	5
P-13b	Thumb in higher positions in crotch of hand.	2
P-13b	Flexible wrists, straight fingers. Instruments seem too large.	3
P-2b	Good form, but restricted motion.	2

Evaluator: Priscilla Smith

P-10a	Involved only the finger.	2
C-4b	Very little arm motion involved.	3
P-14b	Entire hand, wrist, and arm are used--good.	5
P-9a	Arm position is good but there is an obvious rigidity to a limited amount.	3
P-6a	Very little arm motion--wrists seem close to neck in some cases--extremely high hold of instrument.	3
C-5a	Hand and finger action OK but arm is rigid.	3
C-8b	Action of hand and wrist is stiff in most cases. Last group of students much more relaxed.	3
P-16a	Combination of action of wrist, arm, and hand is prevalent in most cases.	4
P-17b	Finger action only seems to be involved here.	1
P-13b	No action except in fingers.	1
P-13b	Hands are much too close to neck for effective use.	2
P-2b	Rigidity in motion--only fingers are in motion. Form is average but lacks flexibility.	2

TOPIC: "Shadow Bowing"
Evaluator: Joshua Missal

P-1a	Principle excellent--group excellent.	5
P-9a	Principle well applied.	5

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CODE	COMMENTS	RATING
P-9b	Group appears to be more stiff in approach. Bow grips are stiff and seem to be the cause of overall tension.	2
P-6a	Generally good application. A few weak bow holds.	4
C-5a	Principle well applied. Bow grips not always good or consistent.	4
C-2a	Bowing principle excellent and to the point. In this group bow arms seemed more over to left side of body. Good application of idea.	4
P-19b	This group appears to be more stiff in finger motion.	3
P-13b	Too much interference by teacher. Overall group somewhat stiff.	2
P-13b	Awkward--yet there is some good application of principle.	3
P-2a	Poor application of exercise yet principle will help these youngsters.	2

Evaluator: Kent Perry

CODE	COMMENTS	RATING
P-1a	Good use of forearm; some finger flexibility.	5
P-9a	Excellent wrist and finger motions.	5
P-9b	This group seems less confident. Index finger too high on some.	4
P-6a	Good idea--this changing of platforms with full bow strokes.	5
C-5a	Too many straight fingers and stiffness.	3
C-2a	More freedom in bowing. A few index fingers too high.	5
P-19b	Stiffer fingers, but good forearm.	3
P-13b	Straight fingers.	3
P-13b	Straight fingers, low wrists.	2
P-2b	Stiff elbow, low wrist, bowing from shoulder, all the students here appear to be working too hard.	1

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CODE	COMMENTS	RATING
Evaluator: Priscilla Smith		
P-1a	Some finger action seems to be developing--good wrist action.	4
P-9a	Excellent wrist and finger action.	5
P-9b	Quite stiff fingers--although evidence of correct approach with forearm motion.	4
P-6a	Good contrast for level of bow. Most children are excellent.	4
C-5a	Lack of flexibility in fingers.	3
C-2a	Good forearm motion--class seems divided with one group having much finger and wrist motion.	3
P-19b	Lack of finger motion but good forearm.	4
P-13b	Extreme rigidity.	2
P-13b	Good forearm motion.	3
P-2a	Too much motion from shoulder--lack of finger control.	1
TOPIC: "Rock and Roll" Evaluator: Joshua Missal		
P-10a	When bow grip is correct principle is well applied. No roll applied.	4
C-3b	Bow grips and bow arm positions weak and principle not applied.	1
P-14a	Rock and roll fairly well applied. Some stiffness appeared occasionally.	4
P-6b	Approach incorrect. Bow grips seem to change with different locations of bow.	2
C-5a	Bow grips poor--yet principle of rock fairly well applied. Poor bow holds, however, cancel out application.	2
C-6a	In general--weak bow holds, rigid thumbs--last two youngsters good.	3

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CODE	COMMENTS	RATING
C-8b	Weak left hand and arm positions. Overall application of rock and roll poor.	1
P-16a	Overall approach stiff.	2
P-19a	Wrong approach. Bow grips weak.	1
P-13b	Overall approach fair.	3
P-13b	No use of rock--just roll. Approach weak.	1
P-13b	Wrong tilt of bow. Bow grips inconsistent--mostly weak.	2
C-7a	No rock--all roll. Weak overall.	1
P-2a	Weak left and right hand positions. One or two are good, but majority poor.	2
Evaluator:	Kent Perry	
P-10a	Only three were really successful.	3
C-3b	Too much rocking, as if string crossing.	2
P-14a	First few needed more initiation of elbow on roll. Most were successful.	4
P-6b	Rocking at frog difficult for most.	4
C-5a	Poor bow grips, but good use of roll motion.	3
C-6a	Good form, but a few stiff elbows.	3
C-8b	Stiff fingers.	1
P-16a	Very stiff approach.	1
P-19a	"Chopping" motion (hitting the string) irrelevant.	1
P-13b	Weak, stiff fingers, straight.	2
P-13b	Good rolling, but several grasped bow with fingers too widely spread.	3
P-13b	Weak fourth fingers, good rolling forearm.	3
C-7a	Very good wrist action, but finger placement not too good.	4

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CODE	COMMENTS	RATING
P-2a	Very good bow motion close to frog.	5
Evaluator: Priscilla Smith		
P-10a	Motion of fingers good.	4
C-3b	Too much "up and down" or pumping of arm!	2
P-14a	Some rocking involved here which is relaxed--stiffness in the "rolling" but overall flexible approach.	4
P-6b	Lacks finesse in the rolling because of stiff fingers and poor wrist motion.	3
C-5a	Finger grip is too high--spacing of fingers is too far apart--extreme stiffness.	2
C-6a	Class varies considerably in approach.	3
C-8b	Low right elbows--stiff little fingers on bow.	2
P-16a	Lacks coordination of the motions.	2
P-19a	Too much "jumping" of bow. Rigid fingers and wrist.	1
P-13b	Poor control of the fingers on bow.	2
P-13b	Stiffness in wrists--motions are tight and "jerky."	2
P-13b	Good approach to motions--some rigidity.	3
C-7a	Flexibility in wrist and fingers good but poor arm motion.	3
P-2a	Motion with finger and forearm very good.	4
TOPIC: "Octave Game" Evaluator: Joshua Missal		
C-4a	Bow tilt generally incorrect. Intonation generally weak. Stiff bow arms.	1
P-14	Left and right hand and arm position excellent. Intonation, especially violins, weak.	3
P-6b	Left hand positions very poor. Last youngster is the only good one!	2
P-6a	Bow arms stiff. Intonation fair.	3

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CODE	COMMENTS	RATING
P-19a	Left hand positions poor. Last violin excellent. Cello positions of bow and hand poor.	1
P-19b	Weak hand positions. Weak tone and weak string crossing. Cellist best of all.	1
P-13b	Overall quality poor.	1
P-13b	Somewhat better than P-13b above.	2
P-2a	Poor bow position. Very weak intonation.	1
Evaluator: Kent Perry		
C-4a	Only two matched the pitch of the open string with good position.	2
P-14a	Good bowing, violins sharp third finger, yet look good.	4
P-6b	Poor left hand position. One student (last) played well.	2
P-6a	Better intonation on fewer tries admirable. Poor bow positions.	3
P-19a	Only one played really well in tune.	1
P-19b	Poor control, both hands, except for cello at end.	1
P-13b	Firm sound despite poor positions.	2
P-13b	Firm sound despite poor positions.	2
P-2a	Poor intonation.	1
Evaluator: Priscilla Smith		
C-4a	Generally poor matching of pitch--bowing is stiff and hold is poor. One student good.	2
P-14	Positions are quite good both left and right hands.	4
P-6b	Stiffness in both hands--wrists too close to neck.	3
P-6a	Majority were applying good principles.	3
P-19a	Poor positions and intonation. Poor cellists. One fine violin student.	2

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CODE	COMMENTS	RATING
P-19b	Positions of left hand adequate. Intonation, however, is poor--stiff motion in right arm.	1
P-13b	Stiffness is prevalent	2
P-13b	Adjusts pitch rather readily.	3
P-2a	Poor positions but intonation adequate.	3

TOPIC: "Left Hand Placement"
Evaluator: Joshua Missal

C-4a	Excellent.	5
P-20a	Very good.	4
C-3a	Thumbs are usually tight and strained.	2
P-14a	Violinists--thumbs too often allow neck to sink into crotch. At other times thumbs are too far forward and are strained.	2
P-14b	Fair.	3
C-6a	No placement of fourth finger. Why? Angle of photo makes it difficult to tell accurately if left hand is well placed.	2
P-16a	Again angle of photo makes it difficult to judge. Fingers seem to be placed at random.	2
P-16b	Generally looks good.	4
P-17b	Some (first few) do well--others grip and strain. Finger placement generally good.	3
P-19b	Fair.	3
P-13b	Hand positions seem to vary from child to child. No consistency.	2
P-13b	Too many have neck resting on palm.	1
C-7b	One fair, one poor.	2
P-2b	Fingers don't seem to know half steps from whole steps except for first finger! Left arm may be OK but would hate to hear these!	1
C-3b	Thumbs stiff.	2

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CODE	COMMENTS	RATING
Evaluator: Kent Perry		
C-4a	All good.	5
P-20a	All good except one.	5
C-3a	Several have hooked thumbs and hold second joint of index finger below level of string.	3
P-14a	High thumbs (neck in crotch of hand)--one with gripping knuckle--most have correct first fingers (well arched).	4
P-14b	All good, except for a few fingers too much toward nails.	4
C-6a	All good except for two (thumb and first finger). Difficult to judge because of camera angle. Looks like all first fingers are too low.	4
P-16a	Random placement (Looks like all fingers are one half step apart.)	2
P-16b	Occasional cramped placement of fourth finger (violins).	3
P-17b	Tight grips. Several good fourth finger placements.	4
P-19b	Good.	5
P-13b	Bad thumb (cello). Horizontal thumb (violin). Closed hand (violin).	1
P-13b	Closed hand. Palm touching neck. Random finger placement. High third fingers.	1
C-7b	Sagging first finger.	3
P-2b	Tight forward thumb (under neck too far). Next was other extreme--all half-step finger placement. Fourth finger too low. Again. Again. Again. Neck on palm. Sagging first finger.	1
C-3b	High thumbs.	3
Evaluator: Priscilla Smith		
C-4a	Violin positions good. One cello poor.	4
P-20a		4

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CODE	COMMENTS	RATING
C-3a	Stiff thumbs and fingers. Rigidity in finger placement above strings.	2
P-14a	In most cases the thumb seems too high. On cello the fourth finger is not placed in relation to other fingers.	3
P-14b		3
C-6a	Thumb seems in good relationship to fingers. A few hands touch neck.	3
P-16a	Because of the angle of picture it is extremely difficult to judge placement.	2
P-16b	Angle of picture continues to present problems in viewing.	3
P-17b	Thumbs are flexible in most cases--some exceptions. Finger placement generally correct.	4
P-19b	Hands tend to have extreme tensions in placement.	2
P-13b	Palm of hand is too near neck.	1
P-13b	Again the palm of hand almost touches the neck.	1
C-7b	First fingers lack height.	3
P-2b	Finger placement is inaccurate in many cases.	2
C-3b	Stiff hands.	2

TOPIC: "First Year Tunes"
Evaluator: Joshua Missal

P-10a	Bow arms stiff; bow grips weak. Left arms generally good.	2
C-4a	Bow arms good. Left hand position poor.	2
P-20a	Bow arms weak; bow tilts incorrectly; left hands sag. Intonation good!	2
C-3a	Intonation very poor. Bow arms stiff. Left hands not bad.	1
P-1a	Generally very good. Some bow grips show knuckles too high.	4

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CODE	COMMENTS	RATING
P-14a	Stiff bow arms. Bass not good! Intonation quite good.	4
P-9a	Stiff bow arms, high knuckles on bow grips, left hands weak.	2
P-6a	Good hand positions. Tone somewhat weak. Use more bow.	5
C-1a	Bows wander and are too much over fingerboard. Left hand positions are generally good except in one glaring exception.	3
C-5a	Bow grips awkward, bow arms stiff. Left hands generally good. Intonation fair.	3
C-2a	Left hand positions poor. Bow grips generally good--but arms stiff. Intonation good.	2
C-6a	Bows wander. Too little bow used. Left hands weak.	2
P-16a	Although bow arms are stiff, overall playing and positions are good.	4
P-16a	Bassist moves instrument rather than bow. Cellist has weak left hand position. Violinist good.	3
P-19a	Bows tilt incorrectly. Intonation poor. Bow arms stiff. Left hands sag.	1
P-7a	Bow hands have tendency toward high knuckles. Intonation, etc., good.	4
P-2a	Bow grips, placement, tilt, etc. all poor. Left hand position not too bad. Intonation fair to good.	2
Evaluator: Kent Perry		
P-10a	Various bow speeds. Terrible second fingers. Rigid motions.	1
C-4a	Cellos flat. Good bow motions. Backwards bowing.	2
P-20a	Sharp third fingers. Slow, restricted bowing.	2
C-3a	No pitch center in entire class.	1
P-1a	Upper strings better intonation than lower strings. Backwards bowing. Better, more solid sound. More freedom of motion.	4

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CODE	COMMENTS	RATING
P-14a	Basses and celli: good sound. Fair intonation. Positions generally good.	5
P-9a	Some hesitancy and wrong fingering. But tone pretty good for short time of study.	4
P-6a	Leading tone should be higher. Careless placement of first finger.	3
C-1a	Careless placement of finger at octave (celli). Rigid elbows.	3
C-5a	Sharp third fingers. Low wrists. Stiff fingers. Restricted motion.	2
C-2a	Sharp third fingers. Low wrists. Stiff finger. Restricted motion.	2
C-6a	No pitch center first time (got better second time).	3
P-16a	More freedom of motion. Better positions. Cello intonation improved.	4
P-16a	Good bass player. Intonation of group fairly good.	4
P-19a	Flat left wrist. Low third finger. Restricted bowing.	3
P-7a	More flexible motions. Better intonation. More assured playing.	5
P-2a	Random bowing. Positions break down. More restricted motion.	2

Evaluator: Priscilla Smith

P-10a	Rhythm lacks flow--intonation is adequate.	3
C-4a	Bow arms are fine with motion. Intonation rather poor.	3
P-20a	A rigid approach to both hands.	2
C-3a	Very poor--both intonation and bowing.	1
P-1a	Forearm motion good. Class has a concept of reasonably good intonation.	4
P-14a	Cellos and bass--bow arms have good motion--rhythm is quite firm.	4

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CODE	COMMENTS	RATING
P-9a	Too much tension.	3
P-6a	Forearm motion is beginning.	3
C-1a	Extreme stiffness in most of the bow fingers and wrist--intonation quite adequate.	3
C-5a	Good concept of pitch with broad bow stroke.	4
C-2a	Left hand position is poor. Restricted motion of bow.	3
C-6a	Very little body action--pitch is rather poor.	2
P-16a	Arm motion is good but there is a certain lack of a rhythmic security.	3
P-16a	Too much body movement which restricts good bow motion.	2
P-19a	Very poor motion of bow--poor rhythm.	1
P-7a	Most play with an assurance of bowing and quite adequate pitch.	5
P-2a	Little rhythmic security--poor intonation.	2

TOPIC: "Second Year Tunes"
Evaluator: Joshua Missal

C-4b	Very good.	4
P-14a	Generally very good.	5
P-6b	Bow arms stiff. Left hand positions vary. Some very good performers--some rather weak.	3
P-9b	Bow arms range from good to bad. Left hands generally good. Intonation fair.	3
C-8b	A few bows tilt incorrectly. Martelé should be played in upper third of bow. Left hands generally good.	4
P-16b	Intonation weak. Overall effect fair.	2
P-13b	Group--good overall.	4
P-17b	Poor approach to martelé. Good left hand position. Spiccato needs work.	3

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CODE	COMMENTS	RATING
P-19b	Left hand positions poor. Bow arms stiff--position of same incorrect.	1
P-13b	Martelé stroke needs work. Left hand positions generally poor. Bow arms stiff and inflexible.	1
C-7b	Intonation poor. Bow positions bad. Overall effect poor.	1
P-2b	Bow positions are terrible. Left hand positions not much better.	1

Evaluator: Kent Perry

C-4b	Good positions in both hands. Intonation fair.	4
P-14b	Good bow control.	5
P-6b	Second fingers G string misplaced. Tonic out of tune. Down-up bow concept not established.	2
P-9b	Octave third finger out of tune.	2
C-8b	Clear attacks. Fingers well centered. Good tone.	5
P-16b	Octave third finger out of tune.	2
P-17b	Restricted bowing. Better attacks second time. Exaggerated placement of low and high second fingers. Still some flat right wrists, although most of them held bows well.	4
P-19b	Fairly good motion. Could have more focus to sound. Cellos bow from shoulder.	3
P-13b	Poor intonation--C natural, F sharp. Each variation out of tune.	1
C-7b	Scrubbing bow motions. Terrible intonation.	1
P-2b	Insecure sound. Lost the martelé.	1

Evaluator: Priscilla Smith

C-4b	Hand positions of both left and right are fine--Pitch is "vague."	4
P-14b	Excellent concepts of staccato bowing (and legato)--Intonation "hazy" only in spots.	5

CODE	COMMENTS	RATING
P-6b	Intonation is poor but hand positions adequate.	3
P-9b	Finger placement is extremely poor.	2
C-8b	Good adjustment of string level--bow fingers sometimes stiff but overall bow styles are superior to other groups (except perhaps the second group).	5
P-16b	Concept of bow styles is poor in group one.	1
P-13b	Fair intonation and bowing.	3
P-17b	Lacks vitality in the motion of the bow arm. Finger placement of left hand is not too accurate.	4
P-19b	Too many wrists collapse to touch neck. Cellists are getting bow arm motion only from shoulder.	2
P-13b	Poor positions and intonation is abominable!!	1
C-7b	Extreme stiffness and terrible finger placement.	1
P-2b	Poor concepts.	1

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FORM FIVE May 5, 1969

University of Illinois String Research Project

FROM: Richard Colwell and Paul Rolland

TO: Project Teachers

Dear Friends:

On Sunday, June 1 we shall have the final evaluation session for our project. The meeting will take place at St. Francis Xavier School, 524 Ninth Street, Wilmette, Illinois at 2 pm. Sister Theodata will again be hostess. There will be a panel of distinguished critics including Victor Aitay, concertmaster of the Chicago Symphony, Stan Nosal, from the Kenosha Public Schools, George Perlman, private teacher, Dr. Marvin Rabin of the University of Wisconsin, and Robert Shamo from the Lombard Public Schools. Following the children's demonstration we expect will end not later than 4:30 after which there will be a dinner arranged for the participating teachers. A discussion and evaluation session will follow. Mrs. Margaret Farish will be chairman of the meeting.

We would like to invite all project teachers for this meeting as their comments concerning the project would be most helpful. We are offering to the Chicago area teacher a token fee of $20 and to the downstate teachers $30 each. You will be our guest at the dinner.

The children's evaluation session will comprise of a demonstration of selected action studies performed simultaneously by all children. A list of these action studies is enclosed.

Following the unison demonstration of all children, each of the project classes will perform one or two representative numbers. We expect all the Chicago area classes to participate in this event and realize it might be difficult to bring children from the downstate project classes. However, if any of the downstate teachers wish to bring their class or some of the children from them, please let me know immediately and we shall plan to include them in the program.

Following the unison demonstration of the action studies and the individual performance of the various classes, the Urbana class will demonstrate some of the latest action studies and perform a brief program.

It is important that all teachers who bring children be there for tuning and organization not later than 1:30 so that the video taping of the session may begin promptly at 2 pm and that sufficient time may be provided for the writing of the report. I am looking forward to seeing you.

Cordially,
Paul Rolland
Richard Colwell

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FORM SIX

University of Illinois
String Project Evaluation
St. Francis Xavier School, Wilmette, Illinois
June 1, 1969

The project's primary purpose is to improve class string instruction by designing instructional materials that will enable the teacher to more easily accomplish the objectives of any string teacher.

Evaluators should judge the students on their ability to play the violin, using reasonable expectations for first and second year students all of whom are recipients of class training at various age levels.

The teachers have taught a total program so any comments are appropriate. However the rationale of this project is that one of the most basic faults is excessive tension, which damages nearly all aspects of performance. Materials have been devised to reduce tension in all parts of the student's body. We would appreciate specific references to this aspect if there is any noticeable difference, either good or bad, in your normal expectations for students of the same age and length of training as the performer.

Performances will be by class, however, performance is an individual affair. Desirable would be comments such as: "Bowing technique seems to be outstanding for two students, average for one and unsatisfactory for three." General comments may be used where appropriate.

Please use five categories in making all value judgments. Outstanding, above average, average, below average, and poor. Grades: 5, 4, 3, 2, 1 (five being the best grade).

Richard Colwell

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FORM SEVEN

Terre Haute Evaluation
Effect of Recordings on String Instruction

Teacher Questionnaire

Name of teacher______________________________________

Number of children with records____Violin____Viola____Cello____Bass____

Number without records______Violin______Viola______Cello______Bass______

Comments on the recorded music:

Comments on the record:

Pupils' reaction to the music:

Pupils' reaction to the record before the concert:

Pupils' reaction to the record after the concert:

Please compare your research and control classes in regard to:

1. Musical Style
2. Speed of Learning
3. Attitude, Motivation

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FORM EIGHT

Name__________________ Grade____________________ School__________________

SURVEY
Department of Music

This survey will not affect your grade in any way. The papers will be collected and sent to the University of Illinois. No one in Terre Haute will look at the papers or know the results. Be as truthful as you can.

Circle the number by the statement that best reflects your feelings.

1. 1. I like school
   2. I like school most of the time
   3. School's OK
   4. I like school sometimes
   5. I don't like school

2. 1. I like music class
   2. I like music class most of the time
   3. Music's OK
   4. I like music class sometimes
   5. I don't like music class

3. 1. I like to work math problems
   2. I like to work math problems most of the time
   3. Math problems are OK
   4. I like to work math problems sometimes
   5. I don't like to work math problems

4. If I could learn to play any musical instrument I want to, I'd pick: (answer even if you play an instrument now)

   Flute_____
   Clarinet_____
   Oboe_____
   Guitar_____
   Bassoon_____
   Piano_____
   Violin_____
   Viola_____
   Cello_____
   Bass Viol_____
   Drums_____
   Trumpet_____
   Ukulele_____
   Saxophone_____
   Trombone_____
   Accordian_____

   Skip question 5 and 6 if you do not play an instrument.

5. If you now play an instrument, which one__________________________.

6. 1. I like to practice
   2. I like to practice most of the time
   3. Practicing is OK
   4. I like to practice sometimes
   5. I don't like to practice

7. School is:
   1. Tough
   2. Some subjects are tough
   3. Some subjects are easy
   4. Easy

8. My favorite tune is____.

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FORM NINE Subjective Test

Student's Name ______________________________ Number __________

Evaluators will comment on:

1. Ability to tune instrument

2. Posture

3. Flexibility of motion

4. Quality of tone
   Freedom of sound
   Indicate obvious causes if quality is poor

5. Intonation

6. Rhythmic accuracy

7. Ability to maintain on-going performance without loss of correct technique.

8. Subtle sensitivity to the music
   Phrasing
   Rhythmic freedom
   Dynamics

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FORM TEN

Dallas Evaluation

Effect of Recordings on String Instruction

Comments of Judges

Control Group. Students did not hear the records at any time. However, they had the opportunity to play with and hear older, more advanced students in the school. / designates the next evaluator.

No.	Yr. Adv.	IQ	Instr.	Tone Quality
1	1st	117	Vln.	Pretest: Tone scratchy at times / Tension causes tight, small tone. Very little freedom / Tone is small. Needs to use more bow Scratchy at frog. Posttest: Too much bow pressure / Uses only 6 to 8 inches of bow / Uses too short a bow stroke, but is improving over the first audition.
2	1st	100	Vln.	Pretest: Good. Needs to follow curve of bow to develop sound Posttest: Small sound. Body too stiff / Lack of shoulder freedom and courage inhibit tone / Is improving--needs to be more definite about stroke.
3	1st	108	Vln.	Pretest: Pressing too hard on hair--holding with 1st finger / Small but relaxed / Some static quality to sound. Posttest: Tone small / Coming--but stiff and lacks the ring of a flexible bow arm action.

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No.	Yr. Adv.	IQ	Instr.	Tone Quality
4	1st	104	Cello	Pretest: Good, but small / Free--but no core to sound. Posttest: Tone lacks freedom--both arms stiff / Thin / Not using arm weight--causes fuzzy sound. Some freedom, however.
5	1st	118	Vla.	Pretest: Tone is good, but would be better controlled by placing fingers over stick more / Needs more arm weight / Rather free but no core to sound. Posttest: Fair / Freedom is there.
6	1st	92	Vln.	Pretest: Good, but has some scratches and rough bow changes / Hampered by crooked bow. Posttest: Good. Roughness gone. Flexibility helps greatly / Good.
7	2nd	113	Vln.	Pretest: Good--a little stiff because first finger grips bow / Nice / Sound is free. Posttest: Hampered by lack of wrist flexibility / Good / Bow is crooked. Some freedom, but lacks of core of sound.
8	2nd	121	Cello	Pretest: Free and pleasant tone / Free sound is coming! However, sound has some static quality in its character. Posttest: Good. Much more mature and solid / Tone is a bit harsh because bow is crooked / Core of sound is good. There is a "ring" to the sound.
9	1st	98	Vln.	Pretest: Pinched tight sound. Little right arm freedom / Some static quality in sound. Posttest: Small because of restricted movements / Sound is free.
10	1st	95	Vln.	Pretest: Big tone / Good solid tone, but lack of bow control caused break at end of each bow / Free to some extent--needs to develop a concept of a round sound. Posttest: Good--not as relaxed as he should be, but is showing progress / Good--big and free / Improving.
11	2nd	122	Vln.	Pretest: Pretty good, but would be improved with freer right arm motion / Somewhat static. Posttest: Holding bow with first finger only tends to make tone small / Tone improved--but some restriction of arm movement causes a less ringing tone than possible.

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No.	Yr. Adv.	IQ	Instr.	Tone Quality
12	2nd	116	Vln.	Pretest: Good. Pleasing and unrestricted / Improving. Posttest: Has tendency to push too hard at the end of the bow--but sound is generally very good / Tone is greatly improved because of greater flexibility in body and more secure position.
13	1st	118	Cello	Pretest: Small. Uses very little bow. Poor bow hold causes lack of intensity in tone / Free--but no core to sound. Posttest: Big sound, but needs to correct posture for freedom / A static quality--no follow-through in stroke yet.
14	2nd	120	Vln.	Pretest: Tone pretty good --considering the amount of tension in the shoulder. Posttest: Good but stiff bow arm. Not using wrist / Good / Freedom of sound is improving.
15	1st	126	Vln.	Pretest: Does not play into the string. Crooked bow / Good. Posttest: Tone is small / Good.
				Intonation
1				Pretest: Listens & corrects / Generally good. Posttest: Good / Had trouble--sharp / Fair, but doesn't correct wrong pitches.
2				Pretest: Good / Good / O.K. Posttest: Good / Fair / Good.
3				Pretest: First finger on G string is sharp. Posttest: Tendency to play flat / Not very sensitive. Settles for less than correct / Questionable.
4				Pretest: Good / O.K. / O.K. Posttest: Good / O.K. generally. Did have some problems--flat.
5				Pretest: Fair / Corrects pitches. Posttest: O.K. / Questionable--flat.
6				Pretest: Good / Generally good. Posttest: Good / Good / Good, but has some problems.

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No. Intonation

7 Pretest: Sharp / Good / Generally good.
Posttest: Good / Corrects pitches / Good.

8 Pretest: Good--except on A string / Corrects when wrong, usually / Good.
Posttest: Very good. Corrects if necessary / Good / Good.

9 Pretest: Good / Fair / First finger is sharp.
Posttest: Good / Good.

10 Pretest: Good / Fair / First finger was sharp.
Posttest: O.K. after he gets started / Corrects pitches / Questionable.

11 Pretest: Good on first piece. Flat on second piece / O.K. / First finger is sharp.
Posttest: Good / Good.

12 Pretest: Good / Listens well / Generally good.
Posttest: Good / Good.

13 Pretest: Good / Does not correct / O.K., but a few problems.
Posttest: Playing flat / Listens better than at first audition and corrects some now / Generally O.K. Did have problems--flat.

14 Pretest: Good / First finger sharp.
Posttest: Good / Good.

15 Pretest: Excellent ear--adjusts pitch / O.K. considering that the student has just changed to a larger violin / Corrects pretty well.
Posttest: Good / Good.

Rhythm

1 Pretest: O.K.
Posttest: Good / Not there yet.

2 Pretest: O.K. / O.K. / Good.
Posttest: Good / Good.

3 Pretest: O.K. / O.K.
Posttest: O.K. / None / Not exact--not definite.

4 Pretest: O.K. / O.K.
Posttest: O.K. / O.K.

5 Pretest: O.K.
Posttest: Yes.

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No.	Rhythm
6	Pretest: O.K. / O.K. Posttest: Good / Good / Good.
7	Pretest: O.K. / Good / O.K. Posttest: Good / Yes / Good.
8	Pretest: O.K. / Fair / O.K. Posttest: Very good / Good / Good.
9	Pretest: O.K. / O.K. Posttest: No / O.K. / Questionable--not definite.
10	Pretest: O.K. / Good / O.K. Posttest: O.K. / O.K. / Good.
11	Pretest: O.K. / O.K. / O.K. Posttest: Good / Good.
12	Pretest: O.K. / Good / O.K. Posttest: Good / Good.
13	Pretest: O.K. Posttest: Fair / Good / O.K.
14	Pretest: O.K. / O.K. Posttest: Good / Good.
15	Pretest: O.K. / O.K. Posttest: Good / Good.

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Research Group. Records were used in the classroom and at home.

No.	Yr. Adv.	IQ	Instr.	Use of Records	Tone Quality
1	1st	121	Vln.	Occasional	Pretest: Fair / Hampered by crooked bow / Good. Posttest: Tone affected by stiff bow arm / Free sound coming.
2	1st	110	Vln.	Occasional	Pretest: Looked and sounded relaxed, even though he was obviously nervous / Quality is affected by restricted body movement / Sound is a little static. Needs more bow speed. Posttest: Free to some extent. Bow travels too close to bridge.
3	1st	108	Vln.	Very little	Pretest: Good tone and bow arm. Posttest: Freedom is coming--not much basis to sound / Small--too cautious.
4	1st	130	Cello	Good	Pretest: Very fine start / Good. Free arm action / Free sound. Bow not quite straight. Posttest: Somewhat fuzzy. Bows a little crooked because of drop in wrist / Shows real promise--good general approach / Generally forced.
5	1st	112	Vln.	Twice a week.	Pretest: Tone is harsh because of bow hold / Good. More right arm freedom would produce even better sound / Lack of core in sound. Posttest: Free--but needs more basis to sound.
6	1st	98	Vln.	Moderate	Pretest: Needs more arm weight / Has some core to tone, but needs better control of bow. Posttest: Tone small / Hampered by lack of bow control.
7	2nd	112	Vln.	Very good	Pretest: Good. Excellent bow hand / Good, but stiff bow arm / Lacks core. Posttest: Free sound coming.

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No.	Yr. Adv.	IQ	Instr.	Use of Records	Tone Quality
8	1st	132	Vla.	Good	Pretest: Needs more arm weight / Good tone but stiff bow arm. Posttest: Plays agressively--good tone. Greater right arm freedom will bring greater resonance to tone / Harshness in sound (could be the instrument).
9	1st	112	Vln.	Very little	Pretest: Big tone. Bow not straight. Posttest: Big tone / Core of sound coming / Improving.
10	1st	100	Vln.	Occasional	Pretest: Good, but forced. Posttest: Pretty good / Free sound coming.
11	2nd	130	Vln.	Good	Pretest: Fairly good sound / Tone was fairly free / Good. Posttest: Tone small but clear / Small / Free, but not much core to sound.
12	2nd	116	Vln.	No report. Moved out of town.	Pretest: Solid. Good bow work gives good sonority. Posttest: Improving.
13	1st	123	Cello	Occasional use.	Pretest: Very good / Cautious bowing motion causes small sound / Free and basic core to sound is coming. Posttest: Weak, especially on lower two strings.
14	2nd	118	Vln.	Occasional	Pretest: Good. Posttest: Free sound.
15	1st	127	Vln.	Good	Pretest: Good--dainty, though / Lack of core in sound. Posttest: Tone small / Tension shows up / Free, but no core to sound.
					Intonation
1					Pretest: Good / Corrects errors. Posttest: Good / Good / O.K.
2					Pretest: O.K. / Listens / First finger sharp. Posttest: Corrects sometimes / Good--flat at times / Generally O.K.--gets flat because he holds viola with left hand.

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No.	Intonation
3	Pretest: Good / O.K. / First finger sharp. Posttest: Questionable. Intonation better in memorized piece / Cannot correct or does not / Sharp.
4	Pretest: Excellent / Good / O.K. Posttest: Yes--corrects--careful / 4th finger flat at times / O.K.
5	Pretest: Sharp / Fair--caused by poor left hand position and lack of elbow freedom / Innacurate. Posttest: Good / Fair / O.K., generally.
6	Pretest: Weak yet for beginner / Does not listen and correct. Tilt of head may throw left hand position off. Posttest: Not always correct / Good / O.K.
7	Pretest: Fair / Does not correct errors / First finger sharp. Posttest: Good--sharp on second tune / Does not correct / Not good.
8	Pretest: Reach back with first finger / First composition good--second composition--sharp / Does not listen and correct. Posttest: Listens / Flat at times / O.K.
9	Pretest: Good / Good / O.K. Posttest: Good / First finger sharp / O.K.
10	Pretest: Good / O.K. Posttest: Listens and usually corrects / Good / O.K.
11	Pretest: Seemed good / Good / Fair. Posttest: Good / Good / O.K.
12	Pretest: First finger sharp / Corrects well / Good. Posttest: Good / Either doesn't listen carefully, or corrects inappropriate degrees / Questionable.
13	Pretest: Excellent / Good / Good. Posttest: Sharp / Plays a little sharp / Generally O.K.
14	Pretest: Sharp / Doesn't listen and correct / First finger sharp. Posttest: Questionable / Slow to correct errors / Flat at times.
15	Pretest: O.K. / Problems caused through tense left hand / Good. Posttest: Played slightly flat at times / Doesn't correct / O.K., generally.

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No.	Rhythm
1	Pretest: O.K. / O.K. / Good. Posttest: O.K. / Good / O.K.
2	Pretest: O.K. / O.K. Posttest: Good / Coming--hampered by lack of bow control.
3	Pretest: Good / O.K. Posttest: Fair. Good in memorized piece / Poor. Particular trouble when there is more than one note per bow / Good.
4	Pretest: Excellent / Good / O.K. Posttest: Good / O.K.
5	Pretest: Excellent / Fair / Seemed good. Posttest: Good / Fair / O.K., but not really secure yet.
6	Pretest: O.K. / O.K. / O.K. Posttest: Not good / Good / Generally good--hampered by lack of bow control.
7	Pretest: O.K. / O.K. / O.K. Posttest: Good / Fairly good.
8	Pretest: O.K. / O.K. / Erratic when piece became difficult. Posttest: Good / O.K.
9	Pretest: Good / Good. Posttest: Good / O.K. / O.K.
10	Pretest: Seems O.K. / Good. Posttest: Pretty good / Good / O.K.
11	Pretest: O.K. / Good / O.K. Posttest: Good / Good / O.K.
12	Pretest: O.K. / Good / O.K. Posttest: Good / O.K. / O.K.
13	Pretest: Excellent / Generally good / O.K. Posttest: Good / O.K.
14	Pretest: O.K. / Good / O.K. Posttest: O.K. / Good.
15	Pretest: Gets involved with technical difficulty of fingers rather than rhythmic accuracy / O.K. / Good. Posttest: Good / Good / O.K.

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APPENDIX D

SUGGESTED CURRICULUM GUIDE

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APPENDIX D

SUGGESTED CURRICULUM GUIDE

This chart is designed to give the teacher a comprehensive view of the Action Studies and materials included in the films and accompanying manuals developed by the Project. It is hoped that the chart will help the teacher understand the relationships among the various activities and will put into perspective the actions which aim to develop basic techniques and free the beginner of unwanted excessive tensions.

The chart is intended as a guideline, not as an inflexible program of instruction. It indicates what seems to be a reasonable sequence and schedule of activities for fourth grade classes meeting for approximately thirty minutes twice a week. However, each teacher must use his own judgment in determining the amount of time spent on the various aspects of instruction. Naturally, the pace of learning will vary according to the size, schedule, and age level of the class. It is estimated that the thirty-two units of the Action Studies can be presented and frequently reviewed within two years of instruction.

Part One of the chart is a topical outline in which the actions of each subject are listed in order of suggested development.

Part Two of the chart presents study units to be presented to the students in sequence. Each of these units contains two or more actions selected from the various topics.

Most of the actions are introduced during the first year. Refinement and application of the skills in an increasingly musical context take place during the second and succeeding years of instruction.

This chart is only an outline; detailed instructions for teaching each action are given in the films and teachers manuals.

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PART 1

*TIME TABLE**	*ESTABLISHING THE VIOLIN HOLD*	*TUNES AND OTHER MATERIALS*
Unit 1	1. Hold the violin in rest position	
"	2. Transfer it into playing position	
"	3. Shape the left hand with left hand pizzicato	Word and name rhythms; Drill record I; open string accompaniments to Skip to My Lou, On Top of Old Smoky, Barcarolle, Mary Had a Little Lamb, Lightly Row, Jingle Bells, Swanee River, Camptown Races; "Rhythm Games" (See manual "Rhythm Training")
"	4. Begin tuning skills	Drill record I
Unit 2	5. Establish good stance	
"	6. Develop strength using the "Case Walk"	
Unit 3	7. The "Statue of Liberty"	
Unit 4	8. Secure and stabilize the violin	
	9. The "Shuttle"	
Unit 5	a) Low-middle registers	Word and name rhythms
Unit 6	b) Middle-high and low-middle-high registers	Word and name rhythms
Unit 7	10. "Left Arm Swinging"	
Unit 8	11. "Tapping"	Word and name rhythms

*The teacher makes up his own time table. The Units indicate the order of first exposure to a skill. Each skill should be frequently reviewed until completely mastered. With rapidly advancing fourth grade classes the Units can be introduced in successive weeks. See PROGRESS CHART for the contents of each Unit.

L-1 ESTABLISHING THE VIOLIN HOLD

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TIME TABLE	*LEARNING TO HOLD THE BOW*		*TUNES AND OTHER MATERIALS*
Unit 1	1.	Prepare the bow hold with a dowel stick or pencil	
"		a) Thumb and middle finger circle	
"		b) All fingers	
Unit 2	2.	Hold the bow with the help of the left hand--the Early Bow Hold is recommended	
"	3.	"Shadow Bowing"	Name and word rhythms; Hot Cross Buns, Hoe Down, and other simple tunes
Unit 3	4.	Hold the violin and bow simultaneously	
"		a) Place the left hand in the middle register	
"		b) Hook the tip of the bow over the end of the left fourth finger	
"		c) Establish the bow hold	
"		d) Place the bow on the string at the balance point	
"	5.	"Rock the Bow"	
"	6.	"Place and Lift" the bow	
Unit 5	7.	Repeat numbers 2-7 with the regular bow hold	

R-1 LEARNING TO HOLD THE BOW

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TIME TABLE	PLAYING AT THE MIDDLE WITH SHORT STROKES	TUNES AND OTHER MATERIALS
Unit 3	1. "Roll the Arm"	
"	2. Play free rhythms on single strings	Improvise
"	3. Play word and name rhythms on single and two open strings	Make up your own; Drill record 1; Persian Song, Slumber Song, Cradle Song, Barcarolle
Unit 4	4. Practice various bowings in open string cycles	Drill Record 1
"	5. Play open string harmony parts to melodies	Play open string accompaniments to Skip to My Lou, On Top of Old Smoky, Barcarolle, Mary Had a Little Lamb, Lightly Row, Jingle Bells, Swanee River, Camptown Races
Unit 5	6. Study slurred string crossings	Make up your own; Drill record 1
Unit 10	7. Refine tone beginnings and releases, using the "Rebound" and follow-through	

R-2 PLAYING AT THE MIDDLE WITH SHORT STROKES

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*TIME TABLE**	*ESTABLISHING LEFT HAND AND FINGER PLACEMENT*	*TUNES AND OTHER MATERIALS*
Unit 2 "	1. Establish correct placement of 1st, 2nd, and 3rd fingers a) With a pencil b) With the violin	Drill record I; Hot Cross Buns, Jingle Bells, Mary Had a Little Lamb, Fletcher tunes using 1-3, 0-2, 0-1 fingering--Echo Song, Slumber Song (Second part), etc.
Unit 4	2. Play octave with a) 0-3 fingering on two strings	Drill record I; Persian Song, March, Song of the Waves, Cradle Song, Sweet Eyed Sue, French Folk Song, Old MacDonald
Unit 30	b) "Percussion Play"	
Unit 20	3. Establish low placement of first finger (not filmed)	Drill record II; Morris Dance Tune, Pirate Song, Little Old Clock, Parade of Picadors, Spanish Traveler's Tale
Unit 21	4. Introduce whole step pattern 1 2 3 4 (not filmed)	Two Dancing Butterflies, An Old Legend

L-2 ESTABLISHING LEFT HAND AND FINGER PLACEMENT

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TIME TABLE	*BOUNCING THE BOW*	*TUNES AND OTHER MATERIALS*
	Study spiccato first with the Early Bow Hold, later, with the regular hold	
Unit 9	1. Bounce the bow slightly	Name and word rhythms
Unit 10	2. Add sound by glancing strokes at various angles	Name and word rhythms; Drill records II and III; Hot Cross Buns, Jingle Bells, Skip to My Lou, Jack and Jill, Little Old Clock, Old MacDonald, Polka, Peasant Dance
Unit 11	3. Practice string crossings with bouncing bows (Watch elbow level!)	Make up your own; Drill record II

R-3 BOUNCING THE BOW

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TIME TABLE		*EXTENDING THE BOW STROKE*	*TUNES AND OTHER MATERIALS*
Unit 6	1.	Play "Fly Pizzicato"--encourage a balanced stance and slight body movements	Improvisation; open string accompaniments to Barcarolle, On Top of Old Smoky, The Boom and the Chick-Chick
Unit 7	2.	Explore the various parts of the bow using free rhythm--"Wandering"	
Unit 9	3.	Practice Silent Bow Transfer	
Unit 11	4.	Play short strokes followed by Silent Bow Transfer	Improvise
Unit 12	5.	Practice the "Rebound," gradually increasing the length of the strokes	Improvisation; scales and arpeggios, chords in ensemble; Drill record II; open string accompaniments
"		Study long strokes followed by release	
Unit 14	6.	Practice slurred string crossings, gradually increasing the length of the strokes	Improvisation; Drill records I,II, and III; Persian Song, Slumber Song (second part), Sarabande, Mayday Carol
Unit 15	7.	Study pieces with long slurred strokes on one string	Barcarolle, Row, Row, Dreamy Afternoon, Blue Lullaby, Mayday Carol
Unit 20	8.	Study long strokes followed by release	Improvisation; scales and arpeggios; Drill records I,II, and III; chords in ensemble
Unit 23	9.	Play long strokes for evenness and power	Scales, double stops; Drill record II; Dreamy Afternoon, Mayday Carol, Serenade, Dreamy Eyed Sue, In Space

R-4 EXTENDING THE BOW STROKE

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TIME TABLE	*DEVELOPING FINGER MOVEMENT*	*TUNES AND OTHER MATERIALS*
	1. Initiate use of fourth finger in	Drill record II; "Blue Lullaby"
Unit 8	a) Low placement	
Unit 9	b) Normal placement	Drill record II; fragments of well-known tunes; more advanced tunes using fourth finger: Slumber Song, Sweet Melody, Dreamy Afternoon
Unit 12	2. Develop vertical movement	Drill record II, Dancing Fingers, Morris Dance Tune, O'Malley's Reel, Mayday Dance
Unit 16	3. Practice horizontal movement	Drill records II and III; Sweet Melody, Shoeshine Shuffle, Ragtime Tune
	4. Study finger movement across the string	Drill record II; Lightly Row, Jingle Bells, London Bridge, Camptown Races, America, Song of the Waves, Sweet Melody, Serenade, Hora. Peasant Dance, Parade of Picadors
Unit 17	a) Holding fingers down	
"	b) Double stops	
Unit 20	c) Advance preparation for string crossing	

L-3 DEVELOPING FINGER MOVEMENT

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TIME TABLE	*MARTELÉ AND STACCATO*	*TUNES AND OTHER MATERIALS*
Unit 8	1. Place the bow on string and add pressure	
"	2.. Produce a biting sound (Collé)	Drill record II
Unit 12	3. Add bow to the collé to result in martelé stroke	Drill record III; Old MacDonald, Jingle Bells, March, Pop Goes the Weasel, O Dear, What Can the Matter Be, Skip to My Lou, Irritable Cuckoo, Polish Dance, Coke Date, Peasant Dance, Gavotte, Jungle Dance, Fiddler's Blues, Pirate Song
Unit 14	4. Martelé-staccato--play two or more martelé strokes on the same bow	Drill record II; Hot Cross Buns (Variations), Sweet Eyed Sue (Variations)

R-5 MARTELÉ AND STACCATO

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TIME TABLE	BASIC SHIFTING MOVEMENTS	TUNES AND OTHER MATERIALS
Unit 7	1. Play long silent shifts without the bow	
	2. Play long, free shifts using the bow	
Unit 14	a) "The Ghosts"	Drill record II
Unit 18	b) "The Flute"	
	3. Match Octaves	
Unit 16	a) Alternate stopped and harmonic octaves	Drill record II
Unit 27	b) stopped octaves on the same string	Persian Song
Unit 22	4. Play stepwise shifts (transposition)	Drill record II; fragments of well-known pieces: Hot Cross Buns (3-2-1), Au Clair de la Lune (1-1-1-2-3-2)
Unit 23	5. Include shifts in fragments of well-known pieces	Mary Had a Little Lamb, Lightly Row; Row, Row, Row, Barcarolle
Unit 25	6. Play scales and arpeggios on one string	Make up your own; Drill Record III
Unit 27	7. Play 1st position tunes in the 5th position	Make up your own

L-4 BASIC SHIFTING MOVEMENTS

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TIME TABLE	*DEVELOPING FLEXIBILITY*	*TUNES AND OTHER MATERIALS*
	1. Play sequential actions with follow-through	Drill records II and III
Unit 12	a) note-note-rest	Barcarolle accompaniment
Unit 13	b) note-group-note-rest	Swanee River accompaniment
Unit 17	c) group-note-rest	Apply to scales and arpeggios
Unit 20	d) note-rest-note	Apply to scales and arpeggios
Unit 19	2. Play continuous short strokes with wrist and finger flexing	Name and word rhythms; Barcarolle, Blue Lullaby, Saraband, Song of the Waves, Row, Row, Row Your Boat, Cradle Song, Banjo Tune
Unit 22	3. Develop strength and flexibility for sustained tones	Drill record II; scales and double stops; Saraband, Mayday Carol, Serenade
Unit 25	4. Practice string crossings with wrist and finger flexing	Drill record II; Slumber Song, Country Fiddler, Hora
Optional	5. Bow gymnastics* a) Roll the bow with the thumb b) Crawl up and down the stick c) Teeter-Totter d) Drop and lift the hand	

* These gymnastics need not be used by those who naturally develop flexibility in the wrist and fingers.

R-6 DEVELOPING FLEXIBILITY

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TIME TABLE	*FIRST STEPS IN VIBRATO TEACHING*	*TUNES AND OTHER MATERIALS*
Unit 8	1. Tap rhythms and groups of notes (may combine tapping with the shuttle)	
Unit 13	2. Teacher vibrates student's fingers	
Unit 15	3. Vibrate the left middle fingers on top of the right hand (No instrument) a) First finger base contact b) Second-third fingers and first finger base contact c) Thumb and first finger base d) Thumb and fingers contact	
	4. Practice the same series of actions with the violin	
Unit 19	a) In rest position	
"	b) In regular position	
Unit 21	5. Vibrate and bow on open strings (Intensity Vibrato)	
	6. Tap and hold finger down	
Unit 24	a) Without the bow	
Unit 26	b) With the bow	Drill record III
	7. Practice "Pivoting Shifts"	
Unit 28	a) Chromatic finger shifts	
Unit 29	b) Hand and arm shifts	
Unit 31	8. Time the vibrato movement for regularity and speed	

L-5 FIRST STEPS IN VIBRATO TEACHING

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TIME TABLE	*SUSTAINED STROKES, DÉTACHÉ, AND RELATED BOWINGS*	*TUNES AND OTHER MATERIALS*
	1. Slow détaché in the upper half	Drill records II and III; French Folk Song, Sweet Eyed Sue, Banjo Tune, Creole Tune, Two Dancing Butterflies
Unit 13	a) Simple	
Unit 18	b) Accented	Drill record III; Hoe Down, Old MacDonald, Camptown Races, Skip to My Lou, Sweet Eyed Sue, Ragtime Tune, March, Pirate Song
Unit 27	c) Expressive	Fiddler's Blues, Mountain Serenade, Swinging Along, Two Dancing Butterflies
Unit 29	d) Slow détaché at various parts of the bow	
	2. Sustained strokes with even bow division	Swanee River, Barcarolle, Mayday Carol, Saraband, Song of the Waves, Sweet Melody, Tenor Aria, In Space, Slumber Song, Dreamy Eyed Sue
Unit 22	a) Single string	
Unit 26	b) Two strings	
Unit 24	3. Fast détaché	Drill record II; Banjo Tune, Creole Tune, Hora
Unit 28	4. Tremolo	Drill record II; The Irritable Cuckoo
Unit 30	5. Sautillé	Drill record III; Sweet Eyed Sue Variations, Banjo Tune, Skip to My Lou Variations
Unit 32	6. Tremolo - Staccato (Slurred Staccato)	Drill record II

R-7 SUSTAINED STROKES, DÉTACHÉ, AND RELATED BOWINGS

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TIME TABLE	RHYTHM TRAINING	TUNES AND OTHER MATERIALS
Unit 1	1. ACTION WITH MUSICAL BACKGROUND: Use recordings of music with a well-defined beat. March, clap, or tap with a pencil on the pulse.	Military March, Barcarolle, Old MacDonald, French Folk Song, Jig, Sweet Eyed Sue, March, Cradle Song, etc.
Unit 2	2. IMITATION: The teacher demonstrates a short rhythm pattern and the students imitate it, using the various rhythmic movements described in the manual.	
Unit 3	3. ACTING ON RESTS: Perform rhythm patterns with rests. Maintain movement during the rests.	
	4. ACTING ON THE PULSE AND THE MELODY: Use easy melodies which you expect to teach the students.	Hot Cross Buns, Jingle Bells, Old MacDonald, Lightly Row, Theme from 4th Symphony, Jig, Hoe Down, Banjo Tune, etc.
Unit 4	a) Perform the rhythm of the melody.	
Unit 5	b) Clap the rhythm of the melody and simultaneously march (or step in place) on the pulse.	
	5. READING OF RHYTHMS: Always act on the pulse and make silent motions during the rests.	Read and play rhythms of the tunes to be learned.
Unit 6	a) Acting on the pulse	See "Rhythm Games"
Unit 11	b) Acting on subdivisions	"
Unit 16	c) Actions which are longer than the pulse	"
Unit 19	d) The eighth note as the pulse	"
Unit 27	e) Dotted rhythms with the quarter note as the pulse	"
Unit 31	f) Dotted rhythms with the eighth note as the pulse	"
Unit 32	g) More difficult rhythms	"

R-T RHYTHM TRAINING

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PRINCIPLES OF LEFT HAND AND FINGER ACTION

This film and manual are explanatory rather than developmental. The principles explained should be observed throughout the course of study. Use the materials listed in the manual "Basic Shifting Movements".

1. LEFT ARM MOBILITY: Shifting movements between the low, middle, and high positions are introduced from the beginning as a means of eliminating stiffness and excessive tension which result from the extended use of the first position. Avoid locating the hand in the same position for a long time.

2. BALANCE: The finger tips are poised over the string. Keep them right over their notes. Avoid a position that permanently favors the lower or higher fingers, as this may cause problems for the other fingers. Temporary adjustments may be made.

3. ELEVATION: The hand may be placed higher or lower in relation to the fingerboard. Avoid extremes. A hand too high limits the range of the fingers; an extremely low hand weakens the finger action.

4. THUMB PLACEMENT: With well-balanced fingers, the thumb may function properly with either forward or backward placement. In its forward placement (opposite the 2nd finger), the neck contact is usually near the base of the thumb. In its backward placement (opposite or even slightly behind the first finger), the thumb usually contacts the neck with the inside of its nail member. Extremes of high or low placement should be avoided.

5. ANGLE OF THE FINGERS: Proper finger angle is extremely important. The left hand should be well to the right side of the neck, not under it. The first fingernail should be turned toward the thumb (i.e. to the left, toward the G string), not away from it. Avoiding this rule is a general fault of beginners (especially on the E string), because children don't like the feel of the sharp string pressing the sensitive finger tips.

6. CONTACT OF THE FIRST FINGER BASE: A gently brushing contact from the side of the first finger is encouraged. This contact offers direction and helps the beginner to form a better left hand position. This contact is more on the side of the finger base than on the palmar surface. The contact must not become a stiff grip, thus hampering vibrato and shifting. With intensive vibrato, the contact is released altogether.

P-L PRINCIPLES OF LEFT HAND AND FINGER ACTION

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PART 2

TIME TABLE

UNIT ONE ACTIONS AND MATERIALS

L-1 1. Hold the violin in rest position
2. Transfer it into playing position
3. Shape the left hand with left hand pizzicato
Word and name rhythms; Drill record I; open string accompaniments to Skip to My Lou, On Top of Old Smoky, Barcarolle, Mary Had a Little Lamb, Lightly Row, Jingle Bells, Swanee River, Camptown Races; "Rhythm Games" (See manual "Rhythm Training")
4. Begin tuning skills
Drill record I

R-1 1. Prepare the bow hold with a dowel stick or pencil
a) Thumb and middle finger circle
b) All fingers

R-T 1. ACTION WITH MUSICAL BACKGROUND: Use recordings of music with a well-defined beat; march, clap, or tap with a pencil on the pulse.
Military March, Barcarolle, Old MacDonald, French Folk Song, Jig, Sweet Eyed Sue, March, Cradle Song, etc.

UNIT TWO

L-1 5. Establish good stance
6. Develop strength using the "Case Walk"

R-1 2. Hold the bow with the help of the left hand--the Early Bo Hold is recommended
3. "Shadow Bowing"
Name and word rhythms; Hot Cross Buns, Hoe Down, and other simple tunes

L-2 1. Establish correct placement of 1st, 2nd, and 3rd fingers
a) With a pencil
b) With the violin
Drill record I; Hot Cross Buns, Jingle Bells, Mary Had a Little Lamb; Fletcher tunes using 1-3, 0-2, 0-1 fingering--Echo Song, Slumber Song (second part), etc.

R-T 2. IMITATION: The teacher demonstrates a short rhythm pattern and the students imitate it, using the various rhythmic movements described in the manual.

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UNIT THREE

L-1 7. The "Statue of Liberty"

R-1 4. Hold the violin and bow simultaneously
  a) Place the left hand in the middle register
  b) Hook the tip of the bow over the end of the left fourth finger
  c) Establish the bow hold
  d) Place the bow on the string at the balance point
5. "Rock the Bow"
6. "Place and Lift" the bow

R-2 1. "Roll the Arm"
2. Play free rhythms on single strings
Improvise
3. Play word and name rhythms on single and two open strings
Make up your own; Drill record I; Persian Song, Slumber Song, Cradle Song, Barcarolle

R-T 3. ACTING ON RESTS: Perform rhythm patterns with rests; maintain movement during the rests

UNIT FOUR

L-1 8. Secure and stabilize the violin

L-2 2. Play octave with
  a) 0-3 fingering on two strings
Drill record I; Persian Song, March, Song of the Waves, Cradle Song, Sweet Eyed Sue, French Folk Song, Old MacDonald

R-2 4. Practice various bowings in open string cycles
Drill record I
5. Play open string harmony parts to melodies
Play open string accompaniments to Skip to My Lou, On Top of Old Smoky, Barcarolle, Mary Had a Little Lamb, Lightly Row, Jingle Bells, Swanee River, Camptown Races

R-T 4. ACTING ON THE PULSE AND THE MELODY: Use easy melodies which you expect to teach the students.
  a) Perform the rhythm of the melody
Hot Cross Buns, Jingle Bells, Old MacDonald, Lightly Row, Theme from 4th Symphony, Jig, Hoe Down, Banjo Tune, etc.

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UNIT FIVE

L-1 9. The "Shuttle"
a) Low-middle registers
Word and name rhythms

R-2 6. Study slurred string crossings
Make up your own; Drill record I

R-1 7. With the regular bow hold, repeat numbers 2-7 of topic R-1

R-T 4. ACTING ON THE PULSE AND THE MELODY: Use easy melodies which you expect to teach the students
b) Clap the rhythm of the melody and simultaneously march (or step in place) on the pulse
Hot Cross Buns, Jingle Bells, Old MacDonald, Lightly Row, Theme from 4th Symphony, Jig, Hoe Down, Banjo Tune, etc.

UNIT SIX

L-1 9. The "Shuttle"
b) Middle-high and Low-middle-high registers
Word and name rhythms

R-4 1. Play "Fly Pizzicato"--encourage a balanced stance and slight body movements
Improvisation; open string accompaniments to Barcarolle, On Top of Old Smoky, The Boom and the Chick-Chick

R-T 5. READING OF RHYTHMS: Always act on the pulse and make silent motions during the rests.
a) Acting on the pulse
Read and play rhythms of the tunes to be learned; see "Rhythm Games"

UNIT SEVEN

L-1 10. "Left Arm Swinging"

R-4 2. Explore the various parts of the bow using free rhythm--"Wandering"

L-4 1. Play long silent shifts without the bow

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UNIT EIGHT

L-1 11. "Tapping"
Word and name rhythms

L-5 1. Tap rhythms and groups of notes (may combine tapping with the shuttle)

L-3 1. Initiate use of fourth finger in
a) Low placement
Drill record II; "Blue Lullaby"

R-5 1. Place the bow on string and add pressure
2. Produce a biting sound (Collé)
Drill record II

UNIT NINE

R-3 1. Bounce the bow silently
Name and word rhythms

R-4 3. Practice Silent Bow Transfer

L-3 1. Initiate use of fourth finger in
b) Normal placement
Drill record II; fragments of well-known tunes; more advanced tunes using fourth finger: Slumber Song, Sweet Melody, Dreamy Afternoon

UNIT TEN

R-3 2. Bounce the bow silently, then add sound by glancing the strokes at various angles
Name and word rhythms; Drill records II and III; Hot Cross Buns, Jingle Bells, Skip to My Lou, Jack and Jill, Little Old Clock, Old MacDonald, Polka, Peasant Dance

R-2 7. Refine tone beginnings and releases, using the "Rebound" and follow-through

UNIT ELEVEN

R-3 3. Practice string crossings with bounging bows (Watch elbow level!)
Make up your own; Drill record II

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UNIT ELEVEN

R-4 4. Play short strokes followed by Silent Bow Transfer
Improvise

R-T 5. READING OF RHYTHMS: Always act on the pulse and make silent motions during the rests
b) Acting on subdivisions
See "Rhythm Games"

UNIT TWELVE

L-3 2. Develop vertical finger movement
Drill record II, Dancing Fingers, Morris Dance Tune, O'Malley's Reel, Mayday Dance

R-4 5. Practice the "Rebound", gradually increasing the length of the strokes
Study long strokes followed by release
Improvisation; scales and arpeggios, chords in ensemble; Drill record II; open string accompaniments

R-6 1. Play sequential actions with follow-through
a) note-note-rest
Drill records II and III; Barcarolle accompaniment

R-5 3. Add bow to the collé to result in martelé stroke
Drill record III; Old MacDonald, Jingle Bells, March, Pop Goes the Weasel, O Dear, What Can the Matter Be, Skip to My Lou, Irritable Cuckoo, Polish Dance, Coke Date, Peasant Dance, Gavotte, Jungle Dance, Fiddler's Blues, Pirate Song

UNIT THIRTEEN

L-5 2. Teacher vibrates student's fingers

R-6 1. Play sequential actions with follow-through
b) note-group-note-rest
Drill record II; Swanee River accompaniment

R-7 1. Slow détaché in the upper half
a) Simple
Drill records II and III; French Folk Song, Sweet Eyed Sue, Banjo Tune, Creole Tune, Two Dancing Butterflies

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UNIT FOURTEEN

R-4 6. Practice slurred string crossings, gradually increasing the length of the strokes
Improvisation; Drill records I, II, and III; Persian Song, Slumber Song, (second part), Saraband, Mayday Carol

L-4 2. Play long, free shifts using the bow
a) "The Ghosts"
Drill record II

R-5 4. Martelé-staccato--play two or more martelé strokes on the same bow
Drill record II; Hot Cross Buns (Variations), Sweet Eyed Sue (Variations)

UNIT FIFTEEN

R-4 7. Study pieces with long slurred strokes on one string
Barcarolle, Row, Row, Dreamy Afternoon, Blue Lullaby, Mayday Carol

L-5 3. Vibrate the left middle fingers on top of the right hand
a) First finger base contact
b) Second-third fingers and first finger base contact
c) Thumb and first finger base
d) Thumb and fingers contact

UNIT SIXTEEN

L-3 3. Practice horizontal finger movement
Drill records II and III; Sweet Melody, Shoeshine Shuffle, Ragtime Tune

L-4 3. Match Octaves
a) alternate stopped and harmonic octaves
Drill record III; Persian Song

R-T 5. READING OF RHYTHMS: Always act on the pulse and make silent motions during the rests
See "Rhythm Games"

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UNIT SEVENTEEN

R-6 1. Play sequential actions with follow-through
  c) group-note-rest
  Apply to scales and arpeggios; Drill record III

L-3 4. Study finger movement across the string
  a) Holding fingers down
  b) Double stops
  Drill record II; Lightly Row, Jingle Bells, London Bridge, Camptown Races, America, Song of the Waves, Sweet Melody, Serenade, Hora, Peasant Dance, Parade of Picadors

UNIT EIGHTEEN

R-7 1. Slow détaché in the upper half
  b) Accented
  Drill record III; Hoe Down, Old MacDonald, Camptown Races, Skip to My Lou, Sweet Eyed Sue, Ragtime Tune, March, Pirate Song

L-4 2. Play long, free shifts using the bow
  b) "The Flute"

UNIT NINETEEN

R-6 2. Play continuous short strokes with wrist and finger flexing
  Name and word rhythms; Barcarolle, Blue Lullaby, Saraband, Song of the Waves, Row, Row, Row Your Boat, Cradle Song, Banjo Tune

L-5 4. With the violin, repeat the series of vibrato exercises presented in unit fifteen
  a) In rest position
  b) In regular position

R-T 5. READING OF RHYTHMS: Always act on the pulse and make silent motions during the rests
  d) The eighth note as the pulse
  See "Rhythm Games"

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UNIT TWENTY

L-2 3. Establish low placement of first finger (not filmed)
Drill record II; Morris Dance Tune, Pirate Song, Little Old Clock, Parade of Picadors, Spanish Traveler's Tune

R-4 8. Study long strokes followed by release
Improvisation; scales and arpeggios; Drill records I, II, and III; chords in ensemble

R-6 1. Play sequential actions with follow-through
d) note-rest-note
Apply to scales and arpeggios; Drill record II

L-3 4. Study finger movement across the string
c) Advance preparation for string crossing
Drill record II; Lightly Row, Jingle Bells, London Bridge, Camptown Races, America, Song of the Waves, Sweet Melody, Serenade, Hora, Peasant Dance, Parade of Picadors

UNIT TWENTY-ONE

L-2 4. Introduce whole step pattern 1 2 3 4 (not filmed)
Two Dancing Butterflies, An Old Legend

L-5 5. Vibrate and bow on open strings (Intensity Vibrato)

UNIT TWENTY-TWO

R-6 3. Develop strength and flexibility for sustained tones
Drill record II; scales and double stops; Saraband, Mayday Carol, Serenade

R-7 2. Sustained strokes with even bow division
a) Single string
Swanee River, Barcarolle, Mayday Carol, Saraband, Song of the Waves, Sweet Melody, Tenor Aria, In Space, Slumber Song, Dreamy Eyed Sue

L-4 4. Play stepwise shifts (transposition)
Drill record II; fragments of well-known pieces: Hot Cross Buns (3-2-1), Au Clair de la Lune (1-1-1-2-3-2)

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UNIT TWENTY-THREE

R-4 9. Play long strokes for evenness and power
Scales, double stops; Drill record II; Dreamy Afternoon, Mayday Carol, Serenade, Dreamy Eyed Sue, In Space

L-4 5. Include shifts in fragments of well-known pieces
Mary Had a Little Lamb, Lightly Row, Row, Row, Barcarolle

UNIT TWENTY-FOUR

L-5 6. Tap and hold finger down
a) Without the bow

R-7 3. Fast détaché
Drill record II; Banjo Tune, Creole Tune, Hora

UNIT TWENTY-FIVE

L-4 6. Play scales and arpeggios on one string
Make up your own; Drill record III

R-6 4. Practice string crossings with wrist and finger flexing
Drill record II; Slumber Song, Country Fiddler, Hora

UNIT TWENTY-SIX

L-5 6. Tap and hold finger down
b) With the bow
Drill record III

R-7 2. Sustained strokes with even bow division
b) Two strings
Swanee River, Barcarolle, Mayday Carol, Saraband, Song of the Waves, Sweet Melody, Tenor Aria, In Space, Slumber Song, Dreamy Eyed Sue

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UNIT TWENTY-SEVEN

R-T 5. READING OF RHYTHMS: Always act on the pulse and make silent motions during the rests
e) Dotted rhythms with the quarter note as the pulse
See "Rhythm Games"

R-7 1. Slow détaché in the upper half
c) Expressive
Fiddler's Blues, Mountain Serenade, Swinging Along, Two Dancing Butterflies

L-4 3. Match Octaves
b) stopped octaves on the same string
7. Play 1st position tunes in the 5th position
Make up your own

UNIT TWENTY-EIGHT

L-5 7. Practice "Pivoting Shifts"
a) Chromatic finger shifts

R-7 4. Tremolo
Drill record II; The Irritable Cuckoo

UNIT TWENTY-NINE

L-5 7. Practice "Pivoting Shifts"
b) Hand and arm shifts

R-7 1. Slow détaché
d) Slow détaché at various parts of the bow

UNIT THIRTY

L-2 2. Play octave with
b) "Percussion Play"

R-7 5. Sautillé
Drill record III; Sweet Eyed Sue Variations, Banjo Tune, Skip to My Lou Variations

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UNIT THIRTY-ONE

L-5 8. Time the vibrato movement for regularity and speed

R-T 5. READING OF RHYTHMS: Always act on the pulse and make silent motions during the rests
f) Dotted rhythms with the eighth note as the pulse
See "Rhythm Games"

UNIT THIRTY-TWO

R-7 6. Tremolo - Staccato (Slurred Staccato)
Drill record 11

R-T 5. READING OF RHYTHMS: Always act on the pulse and make silent motions during the rests
g) More difficult rhythms
See "Rhythm Games"

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APPENDIX E

LIST OF AUDIO-VISUAL AIDS IN STRING INSTRUCTION

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Films

1. String Techniques, 30 minutes.
   Babcock and Wilcox Co. 81054

   Shows how string instruments are taught at Gamble Jr. High School in Cincinnati, Ohio. The teacher, Herman Slayman inspired by Gilbert R. Waller's teaching employs the laws of physical balance in analyzing, explaining, and developing string skills through basic method materials and orchestra literature. Skills demonstrated include posture, left arm-hand balance and adjustment, shifting, vibrato, bow control at the frog, middle, and tip, martelé, slurs, staccato, and bouncing bows.

2. Discovering String Instruments, 1968, 13 minutes, color.
   Bernard Willets, Film Associates of California 52709

   With the help of a demonstration group of second-year students, the teacher introduces violin, viola, cello, and bass to an elementary class. He illustrates the parts of the instruments and how each is held, the relationship of instrument size to range, production of sound by bowing or plucking the strings, the alteration of pitch by finger position on the string, and tuning the instruments.

3. Suzuki Teaches American Children and Their Mothers, 1965, 15 minutes, color.
   Encyclopedia Brittanica Films, Inc.

   Prepared under a USOE grant in cooperation with the American String Teachers Association, University of Illinois, and Southern Illinois University, Edwardsville.

   Filmed during Mr. Suzuki's guest appearance at Southern Illinois University, June 15-19, 1965. Young American students with prior training in the Suzuki method are used as subjects. Mr. Suzuki teaches the children, and a narrator conversant with American teaching methods explains the technical details of the approach.

4. The Violin, 1967. Twelve units available in 8 mm and 16 mm forms: 16 mm--2 reels, 33 min. each; 16 mm--12 reels, 3 to 9 min. each. Includes a film manual.
   Bureau of Audio-Visual Instruction, The University of Wisconsin, P. O. Box 2093, Madison, Wis., 53701

   Samuel Applebaum discusses basic fundamentals of violin playing and their application to early and more advanced stages of learning. Individual instructional units cover:

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1. Holding the Violin
2. Basic Technique of the Right Hand
3. Basic Technique of the Left Hand
4. Pizzicato
5. Vibrato
6. Shifting
7. Détaché Bowing
8. Tone Control
9. Hand and Finger Bowings
10. Martelé Family of Bowings
11. Three Types of Détaché
12. Off the String Bowings

5. Happy Children of Japan, 1962, 20 minutes.
c/o John Kendall, School of Music, Southern Illinois University, Edwardsville, Illinois.

A Japanese film presenting principles of Suzuki's Talent Education Program and mass performances by children trained in his method.

6. Basic Violin Playing: Tone Production, 18 minutes.
Coastal Visual Education Co., 5620 Hollywood Blvd., Hollywood 28, California.

Henri Temianka, first violinist of the Paganini Quartet, demonstrates the correct position of the right hand, bow pressure, point of contact, slant of bow, left hand articulation, vibrato.

7. Adventuring with Tiddle the Fiddle, 1970.
By Dr. John A. Damiano.
Mar-Lo Educational Aids Company, P. O. Box 359, Moorestown, N. J., 08057

A kit containing two 12 inch records, two film strips, a detailed teachers manual of twenty lessons, and a student workbook.

Recordings

1. Young Violinist's Editions, 1953
Recorded under the supervision of Theodore and Alice Pashkus.

Remington Records, 500 5th Ave., New York, N. Y.

Arrangements in first position of standard repertoire.
Series I: Three records--concerti of Viotti, de Beriot, Accolay, etc.
Series II: Ten records--etudes and concerti of Mendelssohn, etc.

2. Library of Training Solos, music published 1961, records in 1961-62.

Neil A. Kjos Recordings, 525 Busse, Park Ridge, Ill.

Repertoire for first- and second-year students.
Violin: two 7 inch records of 16 pieces
Viola, Cello, Bass: one 7 inch record of 8 pieces

3. Listen and Play, Book I and record, 1961; Book 2 and record, 1962; Book 3 and record, 1965
By John Kendall. Based on the teaching of Shinichi Suzuki.

Summy-Birchard Co., 1934 Ridge Ave., Evanston, Ill.

Violin only. German folk songs, classical pieces, and tunes by Suzuki.

4. Sounds for Success, 1963.
By George DeGregori, Max T. Ervin, and Carroll A. Rinehart

Kendor Music, Inc., Delevan, New York 14042.

One recording and six pages of manuscript for each of the orchestra and band instruments.

5. The Sound of the Violin, 1965.
By Harry Alshin.

Frank Music Corp., 119 W. 57th St., N. Y.

An ear-training and reading method for beginners with twenty pages of text and two lp recordings.

6. Anatomy of a concerto Series, 1965.
By Emery Deutsch.

Pride Music Publications, Inc., 230 W. 41st St., New York 36, N. Y.

Arrangements in first position of standard concerti. Solo violin with second violin accompaniment.

7. Basic Violin Studies, 1967.
By Dr. Louis B. Gordon, Fairleigh Dickinson University.

Music Minus One, 43 W. 61st St., New York 23, N. Y.

A series of basic studies, including scales, solos, and duets in various keys, harmonized in the styles of the great masters. To be used in conjunction with any method book.

8. Music Minus One Series of Accompaniments.

Music Minus One, 43 W. 61st St., New York 23, N. Y.

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9. Suzuki Violin School, 1968.
By Shinichi Suzuki.

Summy-Birchard Co., 1834 Ridge Ave., Evanston, Ill.

Vols. I and II: One 12 inch recording; exercises, folk songs, pieces.
Vol. III: Two seven inch recordings; scales and pieces.

10. Clinician Series, 1969.
By Samuel Applebaum.

Golden Crest Records, Inc., 22o Broadway, Huntington Station, N. Y. 11746

Eight lectures:

The String Bowings (How and when to teach them). Two album set.
How to Develop a Beautiful Vibrato
How to Raise the Standards of String Class Teaching (A series of basic special studies)
How and When to Introduce Rote Projects in String Teaching
How to Develop a Basic Left Hand Technique
How to Develop a Beautiful Tone (The science and art of tone production)
How to Lose Your Fear of the Upper Positions (Specific exercises)
Sixteen Basic Principles of General Musicianship (An aid to interpreting music)

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